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A CLINICAL LECTURE.

Delivered at the Vienna General Hospital,

By PROF. THEODORE BILLROTH, Surgeon to the Hospital.

Head Injuries.

Gentlemen: We enter to-day upon the discussion of injuries to the skull and the soft parts covering it. Wounds of the scalp have acquired a bad reputation amongst surgeons, not only in those cases in which the brain had been injured, but even ordinary wounds were causes of apprehension. It had been observed that erysipelas often followed scalp wounds and that suppuration developed, and, that, in cases in which the brain was not primarily affected, brain complications often ensued, showing a connection too intimate to be disregarded. We know that the purulent process is transmitted through the medium of the more superficial veins to the vessels of the dura mater, and that this may follow quite simple injuries where a continuous opening in the skull cannot be found. This is explained by the breaking down of thrombi, which are carried forward into the sinuses, or even into the veins of the cerebral membranes. These vessels spread the infectious inflammation, and the purulent process extends to the meninges. I remember such a case that terminated unfavorably. The patient, a student, had received a scratch on the scalp from the point of a weapon in a duel. The skull was only grazed. At first the injury seemed to be doing well, but between the fifth and sixth day symptoms of suppurative meningitis made their appearance and soon proved fatal. Formerly these secondary troubles were attributed to various causes, such as "taking cold," but we now know that they have nothing to do with it. Asepsis is, above everything, the most important consideration in these wounds, particularly an aseptic condition of the instruments. If we ask ourselves why certain wounds of the head are so dangerous, we need not wonder, especially where such important organs are in close proximity, that an inflammation extending only about half a centimetre may produce more serious symptoms than an extensive inflammation of the arm. This is also true in case of wounds of the fingers and hands, which are more serious than those of the trunk.

Wounds of the scalp are divided into contused, punctured and incised. A simple contusion is followed by the formation of a hematoma. These extravasations are quite common. If you strike the head, a collection of blood will be produced by the resistance of the scalp to the blow. It is seen most frequently in children, and the domestic remedy is, pressure on the swelling with a heavy silver spoon, which is an efficient means of dispersing the extravasated blood. Occasionally, when confined, it will remain for a long time, as blood which is widely diffused is most readily absorbed. Hematoma have a certain signification, particularly in the new born, of which we shall speak later. Lacerated wounds of the scalp are frequently produced, in women, by the hair becoming entangled in machinery. In this manner nearly the whole scalp may be torn off before the hair gives way. In men they are usually the result of heavy bodies striking the head obliquely, or falls, where the head strikes an object a glancing blow. Simon divides wounds into those with edges that may live and those with edges which cannot live. Yet we abandon the older terms with reluctance. Formerly there was a universal dread of stitching scalp wounds. They were treated by shaving their edges and applying plaster. Suppuration was greatly feared. We can readily understand this, when the barber surgeon takes from his dusty case a dirty instrument, and even arrests the hemorrhage with a filthy sponge. Apprehension after such treatment would be very natural. At the present day the interdiction of sutures in scalp wounds is valueless; we depend on thorough disinfection.

We will now speak of injuries to the skull itself. We have here all the peculiarities of a breach of continuity, depending upon the form of the skull as a bony capsule. We have first simple fissures or cracks. These are separations that resemble flaws in a glass globe. They are only flaws, the pieces not being entirely separated, and they are not movable. I am satisfied that they occur quite frequently without being diagnosed. Being held together, bony tissue forms which fills up the interspace. Excresences of callus are not seen on the skull. We do not diagnose these fissures directly, but from the symptoms. A fissure which has united can be detected with difficulty, even on a prepared skull. Fissures may be simple; more frequently they are compound, and radiate in different directions. Under this head is included a variety of fissure produced by puncture of the skull. They are caused by blows, as with a stick or bullet, or by falling upon a projecting body. If the body be blunt a depression results. In this case we find on the prepared skull that the impression on the inner or vitreous table is greater than on the outer table. The splintering is also much greater internally than externally. When the force is very great, as from a bullet fired in close proximity, an opening is formed and the bone tissue is driven into the brain, causing extensive lacerations. It may happen that the bullet penetrates, making an opening, and is reflected, again emerging. These are distinguished as radiating fractures, penetrating fractures, etc. We have also a type of fracture, the comminuted, where from direct violence, as the blow of a hammer, the skull is completely shattered. A rare form of fracture is that produced by separation of the sutures.

When a fracture of the vault of the skull is present it does not matter how it has been caused. It is, however, of physical and anatomical interest to know how a fracture of the base may be produced. This is of special importance in court, and the appearance of the injury is also of importance. The recent as well as the dried skull possesses a high degree of elasticity. If a skull be compressed, laterally, in a vice, it becomes elongated several centimetres, and reduced considerably in its lateral diameter. It is, therefore, clear that when the power of compression exceeds the degree of elasticity, a fracture takes place. This fracture is not always at the point where the force has been exerted, but at another point. This is explained by the fact that the vertebral column is forced against the base, much as the head of a hammer is against the handle. The effect is therefore about the same if a person's head were placed in a vice, or if something falls upon him. The experiment has been performed of filling a softened skull with paraffine and letting it fall from a height. The paraffine clearly showing the depression. The occurrence of these fractures has also been explained by the propagation of the force in all directions by the same undulating motion that we see when one of a row of billiard balls has been struck, the force being communicated to all the others. The occurrence of fracture of the base depends, however, more upon the elasticity of the skull than the propagation of the force.

AN INTERESTING CASE OF CEREBRAL TUMOR.

By **Wm. Watt Kerr**, M. A., M. B., C. M., Professor of Clinical Medicine, University of California; Visiting Physician, City and County Hospital, San Francisco.

Read before the San Francisco County Medical Society.

Wm. S——, aged 35 years, a barkeeper by occupation, came under my care on June 11, 1889, suffering from epileptic fits. The family history of the patient did not afford anything that would warrant the supposition of a hereditary tendency to nervous disturbance. He confessed to dissipated habits, but denied that he had ever suffered from syphilis, nor did he present any symptoms of that disease. His statement was that two years previous to his admission to the hospital he had received a blow, on the left side of the head, from a billiard cue, which rendered him unconscious for some hours, and from that time he never had been well, having become subject to constant pain and uneasiness in his head. About one year after he received the blow, it was noticed that there was a decided loss of power in the right side of the body, and at the same time severe epileptiform convulsions began to occur at intervals of ten or twelve days. In regard to this history, it must be stated that the relation of these different symptoms to one another in time could not be definitely ascertained. On one occasion, he said that the paresis developed within a few days, and on another that it increased gradually; neither could he be certain whether the epilepsy preceded or followed the paresis. The fact that he was drinking steadily and heavily at the time when these events occurred, is sufficient to account for his imperfect recollection of them.

On examination a depressed scar was found on the left side of the head, about two inches long and one-sixth of an inch deep. It was situated about half an inch below the sagittal suture, almost midway between the root of the nose and occipital protuberance, and therefore crossed the upper portion of the fissure of Rolando, on either side of which lie the cortical motor areas. There was diminution of power throughout the whole right side of the body; the leg was more paralyzed than the arm, and the extensor muscles of the arm more than any other group of muscles in the same limb. General sensibility was normal, but there was a slight diminution in the sensations of heat and cold on the right side. The patient suffered from frequent epileptiform seizures, which sometimes lasted for more than one hour. The question to decide, was whether the lesion was in the motor areas of the cortex, or at the base of the brain. The fact that he had an injury over the cortical areas, which governed the movements of the limb chiefly affected—*i. e.* the leg—the greater degree of paralysis in the extensors of the arm, the centre for which was also near the seat of injury, and the occurrence of epileptiform seizures all indicated a cortical lesion. On the other hand, the lapse of a full year between the injury and the appearance of the paralysis, the complete hemiplegic character of the paresis, and its rapid development (within three or four days) were calculated to throw doubt upon the injury as the sole cause of the symptoms, and to point to a lesion of the pyramidal tract in its course through the internal capsule.

Influenced by these considerations, the patient was told that there was little chance of restoring his power, but that an effort would be made to diminish the severity of the epileptiform attacks. The scalp was repeatedly blistered, and full doses of iodide of potassium were given, without the production of any beneficial results; bromides and other nervous sedatives having been tried with as little satisfaction before his admission. The patient becoming discouraged, requested operative interference, and although the doubtful results were again fully explained to him, he declared his willingness to take any chances of relief, as he could not endure the life he had been living for the past year. The fact that the convulsions were general and not merely local, was, in some degree, opposed to the idea that they were due to a depression in the inner table of bone. There can be little doubt, however, that general convulsions frequently follow what, apparently, are local injuries. Indeed, I have under my care a patient who, more than twenty years ago, received a sabre wound, causing a depressed fracture of the skull, confined entirely to the right side of the head. The fragments never were elevated, and from that time he has suffered from general epileptiform convulsions.

In the hope, therefore, that the patient might be benefitted by the operation, Dr. R. A. McLean consented to remove the portion of bone under the scar already mentioned. By this operation the ascending frontal and ascending parietal convolutions were laid bare in the greater part of their extent, without discovering any abnormal appearances. The inner surface of the bone removed was perfectly healthy; there was not any inflammatory thickening of the meninges; the brain did not bulge so much as usual through the opening, but it looked normal, and an aspirator needle pushed into its substance failed to encounter any change in resistance.

The bone was cleansed, replaced in position, and the wound dressed with antiseptic precautions. Next morning it looked well, but, at the second dressing, less than 48 hours after the operation, it was found that the exposed convolutions had commenced to slough, and when the patient died, on the third day after the operation. they had completely broken down. This was very interesting from a clinical point of view, for there was nothing in the operation itself to account for so sudden a destruction of the the tissues, and the speedy decomposition of the brain substance very clearly indicated the existence of some cause sufficient to interfere with their vitality.

The brain was removed and sent to Dr. D. W. Montgomery, who has kindly furnished me with the results of his examination. The cortex of the left hemisphere presented a large disintegrated area, including nearly the entire ascending frontal and ascending parietal convolutions, as well as the anterior portion of the superior parietal convolution, and extending slightly into the other convolutions of the frontal and parietal lobes situated on either side. On separating the hemispheres, and making horizontal sections, a dense white mass, with ill-defined boundaries, was discovered, occupying the white substance of the left hemisphere, and almost obliterating the cavity of the left lateral ventricle. The upper sections of this tumor were homogeneous throughout, but near its centre there was a disintegrated portion, about the size of a hazel nut. Sections through a lower level showed that the tumor had entirely obliterated the caudate nucleus, the lenticular nucleus, together with the anterior limb and genu of the internal capsule, while the anterior portion of the posterior limb was rendered indistinct. Examination of sections under the microscope showed the tumor to be a glioma, consisting of round cells, with a large amount of neuroglia; the tissue of the tumor passing away into the surrounding brain structure. The tumor was well supplied with blood vessels. The fact that the disintegrated area of cortex was exclusively that which is supplied by the cortical division of the middle cerebral artery, suggested the possibility of that vessel having become obstructed after the operation, but the most careful examination failed to show the faintest trace of embolism.

When comparing the morbid anatomical changes with the symptoms, it must be remembered that, at the time of the operation, the cortex was, to all appearances, healthy, and therefore that the convolutions, which afterwards became disintegrated, were, in all probability, capable of discharging their functions in some degree; although, as we shall afterwards see, there is reason to believe that nutritive changes were taking place in these convolutions, and consequently that their functions were impaired. The total obliteration of the optic thalamus, caudate nucleus, lenticular nucleus, and anterior limb of the internal capsule by the glioma, without the production of any special symptoms, made the case barren so far as yielding any clue to the functions of these areas is concerned. It is generally conceded that the motor tract passes through the middle part of the posterior limb of the internal capsule, and, as the tumor invaded this area in only a very slight degree, it can be readily understood why there was paresis and not complete paralysis. It is most probable that in this case there was a cortical as well as a basal lesion ; the convulsions and the particular paralysis of the brachial extensor muscles gave rise to this idea at the first examination of the patient, and the rapid disintegration of the motor areas after the operation confirmed it. Certainly there was not any embolism of the middle cerebral artery, either in the main trunk, or in any of its larger branches, which would explain the rapid death of the tissues ; and, therefore, I am inclined to believe that nutritive changes had previously existed in these convolutions as a result of the blow inflicted on the skull of the patient, and that the separation of the pia mater during the operation so much further diminished the vitality of the nerve substance by removing the cortical blood vessels, that death of the part ensued. Such a hypothesis appears to explain the marked paralysis of the brachial extensors, and also the convulsions.

It is generally agreed that epileptic convulsions are the result of a sudden discharge of nerve cells, and that the seat of the disease is in the gray matter of the cortex. The functions of the nerve cell is not only to generate force, but also to regulate the transmission of the impulse; to interpose, as it were, a graduated resistance to the nervous current. Any nutritive changes in the cells diminish their power of resistance, and consequently we have a series of rapid discharges, which produce the convulsive attacks. Such is the theory of epilepsy, and in this case we find there was a series of events capable of producing this condition; for not only is it admitted that concussion may permanently injure nerve cells, but it has even been asserted that gliomata and other cerebral tumors may be the result of traumatism. In our case the patient had enjoyed perfect health until he received a severe blow upon the head, which, at the time, produced prolonged loss of consciousness, and was followed by constant headaches. Several months after, he began to suffer from epileptic seizures and loss of power in the opposite side of the body. Upon opening the skull for operative procedure, the brain substance immediately beneath the point upon which the blow was inflicted, underwent a very rapid disintegration, and at the point of *contre coup* a large glioma was discovered. These considerations must materially affect our prognosis in operations for the relief of traumatic epilepsy, as it will require considerable skill in diagnosis to decide whether the convulsions are due to irritation from inflammatory products, etc., or to a permanent and invisible injury to the function of the nerve cells.

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THE DIAGNOSIS AND TREATMENT OF MISPLACED PREGNANCY IN THE EARLY MONTHS.

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Read before the Sacramento Society for Medical Improvement.

Thirty-five cases of rupture of the fetal sac in extrauterine pregnancy are reported by Tait as coming under his observation within seven years; and, as physician to one of the two coroners of Philadelphia, Formad has, in four years, met with nineteen deaths from the consequences of the same condition. These striking figures have led Goodell to remark that, perhaps, extrauterine fetation is the most frequent cause of sudden death in women.

The record of solitary cases is thought by some, and perhaps rightly, to be of little value. But it is solitary cases, here and there and everywhere, that constitute the grand body of medical experience, largely unrecorded, it is true, yet serving none the less to indicate the value and expediency of many surgical procedures. Patients are the creatures, perhaps even the victims, of circumstances; and physicians are daily, nay, hourly, called upon to determine, not what were to be done in ideal circumstances, but what is to be done in the actual circumstances. The equations of person and environment must have their weight. What is duty at Birmingham, may be little better than homicide at Oligopolis.

Mrs. N—— presented herself at my office July 6, 1888, and gave the following history: Age 23 years; married 15 months; previous health good, with exception of a moderately severe attack of chorea in 1882 The menses were due on the 1st of May, but did not appear, and, on the 15th, a uterine hemorrhage set in and continued for two weeks, and was accompanied by severe pelvic pain referred especially to the left side. The flow then ceased for three days, when, in the language of the patient, "the cramping and darting pains in the left side growing more and more intense," she took to bed, where she remained two weeks, with intermittent pain and flow, accompanied by the discharge of pieces of membrane, in her description corresponding to the decidua. The left side was extremely tender and seemed swollen. The flow ceased again, and the patient got up, but was taken with acute cramp in the rectum, which obliged her to return to bed. In a few days, although still suffering cramps, darting pains, and tenderness in the left side, she came to Sacramento. On examination I found the left groin quite tender; the uterus somewhat enlarged and distinctly softened; to the left, and slightly behind the uterus, a sensitive, elastic tumor, about as large as a good-sized orange; the areolæ darkened, and Montgomery's glands enlarged. The case being of exceptional interest and importance, I asked Dr. G. L. Simmons to see it with me. By a careful examination he confirmed the physical conditions already described. Believing the case to be one of tubal pregnancy, I began the daily use of the galvanic current on the 8th of July. At the third sitting, and subsequently for seven successive sittings, the current was carried to 75 milliampères. This current strength was exceedingly painful to the patient, and seemed to mark her limit of tolerance. By the 18th of July the tumor was distinctly flaccid, and by August 27th, the date of patient's dismissal, had diminished at least two-thirds in size, and, six months later, was distinguishable only as a mere thickening of the tissues.[1]

Retrouterine, as well as other forms of pelvic hematocele, in a very large ratio of cases, are probably due to rupture of the fetal sac, in either tubal or abdominal pregnancy. The diagnosis often goes no further than the symptom, however, and the underlying pathological condition is thus robbed of a large and merited contingent of disease and death. Erroneous, or merely symptomatic diagnoses in cases of presumed abortion, with tedious inflammatory complications; of pelvic peritonitis of sudden and inexplicable origin, and of various other obscure pelvic troubles, doubtless contribute not a little to the same result. We may safely conclude, therefore, that the diagnosis of ectopic pregnancy is often symptomatic, often erroneous, often unattempted, and hence that the condition itself is far more frequent than it was formerly supposed to be; or, modifying the statement of Goodell, that it is, perhaps, the most frequent cause of sudden death in women during the child-bearing period, or at least during pregnancy.

In the early months of ectopic pregnancy we find all of the usual signs of early pregnancy modified, however, by the absence of the fetus from the uterus, and by its presence either in the fallopian tube or in the abdominal cavity. Thus envisaged, it seems to me that the early diagnosis of ectopic pregnancy should present no greater difficuties than the skilful diagnostician is accustomed to meet and to overcome. The evidences of early pregnancy consist: First, in the suspension of the menstrual function; and, second, in a characteristic increase of the nutritive activity of the entire reproductive system, generally associated with more or less stimulation, frequently amounting to irritation, of the digestive organs, particularly of the stomach. To fix these evidences imperishably in the mind, it is only necessary to consider them in their physiological concatenation.

Impregnation probably always suspends menstruation. Apparent exceptions to this dictum are doubtless due to hemorrhage from the genital tract below the body of the uterus, frequently from the cervix, or to hemorrhage dependent on partial separation of the fetal envelopes, or on the casting off of decidua from the unoccupied half of a completely or partially double uterus in normal pregnancy, or from the unoccupied uterus in ectopic pregnancy. The value of amenorrhea as a sign of pregnancy, however, is greatly impaired by the fact that it occurs in various pathological as well as physiological conditions independent of pregnancy. The assumption of marital relations, change of climate or location, intense emotions, severe occupation of the mental faculties, and, notably, lactation, as well as the depression and perversion of the nutritive processes, so typically illustrated in phthisis, not infrequently produce amenorrhea, which, without recourse to other phenomena, is indistinguishable from the suspension of menstruation due to pregnancy. Bearing in mind, finally, that amenorrhea, whether physiological or pathological, is purely subjective, and may be asserted or denied by the patient, as interest or desire may dictate, we are warranted in concluding that, occurring in a healthy woman, not subject either to unusual nervous strain, or what in all probability frequently amounts to the same thing, to unusual conditions, it is of sufficient importance to be classed among the presumptive signs of pregnancy.

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[1] On December 2, 1889, nearly 17 months after treatment, I found on bimanual examination, *per vaginam*, no trace of the tumor whatever.

With the suspension of the menstrual function consequent on impregnation, there is a characteristic increase of nutritive activity in the entire reproductive system. The uterus enlarges and softens, first in the body, especially in the lower segment, and finally in the cervix. This development and succulence of the uterine tissues, increasing as pregnancy advances, is generally quite manifest during the latter part of the second and fore part of the third month. The physiological stimulation of the nutritive processes extends to other parts, especially to the vagina and breasts. The mucous membrane of the vaginal vault assumes a characteristic violet hue, spreading with the progress of pregnancy to the vaginal outlet, and deepening to the blue-black, so familiar to every obstetrician. Coincidently with these changes, the nipples swell and become more erectile, especially in primiparæ, the areolæ puff and assume a deeper hue, the sebaceous glands enlarge, resembling papules; and the mammary glands themselves develop, becoming firmer and more sensitive, or even painful.

But digestion and assimilation must keep pace with the rapid development of maternal and fetal tissues. Stimulation of the digestive organs by means of the nervous mechanism relating the nutritive and reproductive systems brings this about, and is normally manifest by increased appetite and slight morning sickness; but, overpassing physiological limits, produces nausea, vomiting, marked ptyalism and anorexia.

Passing now to the consideration of the evidences of misplacement of the embryo, we enter a newer field, with more uncertain and more variable products. Yet, even here, we may usually observe signs that prompt us to exploration and discovery. Tait assumes that ectopic pregnancy is always primarily tubal. Whether this assumption be strictly correct or not, it certainly applies to the overwhelming majority of these cases. If we regard the tube as part of the uterus, the physiological stimulation of the latter in tubal pregnancy is easily explicable; but even if we do not so regard it, this stimulation would be equally explicable by the immediate proximity of these organs and the community of their nerve supply. In consequence of this stimulation a decidua develops in the uterus, and oftentimes the first link in the chain of pathological symptoms is uterine hemorrhage attending the separation and expulsion of the decidua, either piecemeal or in its entirety. This process, of course, closely simulates abortion, for which it will be mistaken by the unwary. But no fetus appears in the discharges, and the hemorrhage is likely to continue, or at least to return. Pain, violent and paroxysmal, and excessive tenderness in one or other groin are likely to follow. At last, but not long deferred, rupture of the fetal sac is announced by excrutiating pelvic pain, and collapse from shock or hemorrhage.

The following symptoms, then, occurring in a presumably, or even possibly pregnant woman, should awaken suspicion of misplacement of the embryo, and lead to thorough exploration of the pelvis:

1. Recurrent or continuous uterine hemorrage, especially if accompanied by discharge of decidua in the absence of a fetus.
2. Relapsing pelvic inflammation, especially if developing suddenly without assignable cause.
3. Paroxysmal pelvic pain, especially if severe, unilateral, and recurrent.
4. Symptoms of rectal and vesical irritation.

We may now present the composite portrait of early ectopic pregnancy as follows: Anomalous pelvic symptoms of a hemorrhagic, inflammatory, mechanical, or traumatic character, associated with the presence, laterally or posteriorly to the uterus, of an elastic, painful, tender tumor, in size corresponding to the feta sac at the presumed period of pregnancy; associated, also, with the absence of the embryo from the uterus, and engrafted on all of the usual signs of early pregnancy.

But as misplaced pregnancy itself is an anomalous condition, so also are its symptoms sometimes anomalous, and occasionally even absent until rupture, like a thunderbolt from a clear sky, prostrates the patient in agony and collapse. In this case, manifestly an early diagnosis will not be made, for the sufficient reason that a physician will not have been consulted; or, if consulted for other troubles, will not have been informed of pelvic symptoms. The differential diagnosis is to be made from the various pelvic neoplasms and inflammations, from retroflexion or retroversion of the gravid uterus, and from pregnancy in one horn of a double uterus.

Pelvic neoplasms and inflammations, when unassociated with pregnancy, are to be differentiated by the absence of the signs of this condition; when associated with pregnancy, by the slower growth of the neoplasms, and their slighter sensibility and painfulness, and the greater diffuseness of inflammatory tumors and the greater continuity of their symptoms; and, finally, when associated with abortion, by the differential symptoms already described, and by the presence of the fetus in the uterine discharges. Retroversion and retroflexion of the gravid uterus may be differentiated by correction of the displacement. Finally, pregnancy in a rudimentary horn of a partially or completely double uterus, is to be distinguished by the absence of the inflammatory, algetic, mechanical and traumatic symptoms of the condition under consideration.

Proceeding to the treatment of early ectopic pregnancy, we may remark that it is still in the formative or largely empirical period, and principles now enunciated, from whatever source, should be regarded as purely provisional. A somewhat careful survey of the field, however, seems to warrant the tentative adoption of the methods to be described hereafter. If, as Tait assumes, every ectopic pregnancy is primarily tubal, then every ectopic pregnancy, unless prematurely terminated either by art or by accident, must eventuate in rupture of the tube. In a very large ratio of cases rupture of the tube means death. Rupture of the tube, then, is to be averted. How? In the opinion of some practicians by the destruction of the fetus, in the opinion of others by its removal.

But, whichever view shall finally prevail, all must agree with Thomas, that death of the fetus, at any time during the course of extrauterine pregnancy is of unqualified advantage to the patient. Arrest of the fetal circulation, immediately and rapidly diminishes the vascularity of the tissues to which the fetus is attached, and, as experience has fully demonstrated, greatly enhances the success of surgical intervention. Death of the fetus, then, should be effected, if the means employed do not of themselves seriously compromise the safety of the patient. For, whether we consider death of the fetus or its removal as the end of treatment, the advantage is unquestionable—on one hand consummating the purpose of treatment, on the other materially contributing to its successful accomplishment.

In electricity, we have a means of effecting the death of the fetus without seriously compromising the safety of the patient, and a means, moreover, which, even in case of erroneous diagnosis, entails no disaster and no chagrin. It fulfills our requirement. As the purpose of this paper is purely practical, we need not enter into historical details. Suffice it to say that to-day electricity is used by one method, the vagino-abdominal, but in three forms, the continuous galvanic, the interrupted galvanic and the faradic. The continuous galvanic current is more effectual, perhaps even safer, than the faradic current, and *certainly* safer than the interrupted galvanic. It is therefore to be preferred. It should be carefully measured by the milliampèremeter, and, as rapidly as the sensibility of the patient will permit, it should be raised by daily increments until the effective strength is reached. This will vary from 50 to 150 milliampères, depending somewhat on the development of the fetus, but, still more, and perhaps chiefly, on the degree in which the current is concentrated on it, and will be determined in each individual case by increasing flaccidity of the fetal envelopes.

Every precaution should be taken to obviate interruptions and even variations of the current, especially if pregnancy be advanced beyond the second month, for the muscular contractions evoked by current variations, and still more by current interruptions, might be sufficient to determine rupture, and thus precipitate the very calamity we seek to avert. But if this danger be declared imaginary, there is real discomfort to the patient in variations, and real danger in interruptions of a powerful current. Besides this, and what is perhaps even more important, a single decided shock may set her unalterably against the treatment. If never before, yet after such a shock one appreciates the obduracy of a woman's opinion and her unalloyed confidence in her own sensations as opposed to the assurances of her medical adviser. To prevent shock, a current regulator should be used instead of a switchboard. Every connection, too, should be perfect and firm, beyond the possibility of break, and the conducting cords above the suspicion of imperfection.

Being assured of these conditions, the operator should test the battery through his own hands, and make sure of the evenness and strength of the current. A large dispersing electrode, preferably of moist clay, as recommended and described by Apostoli, should be applied to the abdomen. The vaginal electrode should be spherical and should be well wrapped in absorbent cotton saturated with a solution of table salt, then introduced into the vagina and pressed gently but firmly against the posterior vault nearest the fetal tumor, and if possible slightly back of it. These points are to be kept in mind, for it is extremely important (*a*) not to shock the patient, (*b*) not to cauterize the vagina, and (*c*) to concentrate on the fetus the largest possible ratio of the current.

The vaginal electrode should be connected with the positive pole, and the abdominal electrode left unconnected until the operator has instructed the patient to keep absolutely quiet during the treatment which, in her presence, should never be called an operation, and until he has ascertained with absolute certainty that the current is turned off, and that, in operating, he will be within easy reach of both current regulator and vaginal electrode at the same time. He may now attach the negative pole to the abdominal electrode, and turn on the current gradually and slowly—with half an eye on the milliampèremeter, a whole eye on the patient's countenance, noting its expression, and both eyes on the vaginal electrode, which is to be held firmly in position by the left hand. The current should be raised, always gradually and slowly, within the first minute to 15 or 25 milliampères, according to the sensibility of the patient, and afterwards even more gradually and slowly until, by the acme of the first treatment, a maximum of from 35 to 75 milliampères is reached. The current should be maintained at maximum intensity to within thirty seconds of the end of the treatment, and then turned off as gradually, but not quite as slowly as it was turned on.

The first treatment should be limited to five minutes, and subsequent ones, repeated daily until death of the fetus is accomplished, to eight minutes. The question of removal of the fetus, after death artificially produced in the early months, must be relegated to the future. But electricity will soon furnish abundant material for intelligent judgment. In the meantime these cases of electrical feticide should be kept under observation, and if the fetal remains produce inflammatory or septicemic complications, should be submitted at once to laparotomy.

Rupture of the fetal sac in misplaced pregnancy, is a capital event, and introduces new factors of such importance, that, by common consent, it establishes a boundary between two well-defined classes. It produces agonizing pain, hemorrhage, shock, and, later, inflammation and septicemia, and should be managed in accordance with well-established surgical principles. If the sac rupture into the peritoneal cavity, laparotomy is undoubtedly indicated, even at the hands of a fairly skilful operator. At the hands of Mr. Tait, it has given results which establish it on an impregnable foundation. If the sac rupture into the broad ligament, and especially if, at the same time, hemorrhage be slight, the constant current may be employed, but with an exaggeration of the precautions already insisted on, and laparotomy reserved for more urgent indications.

Recapitulation: 1. The diagnosis of early misplaced pregnancy is beset with considerable, but not insuperable difficulties, and can ordinarily be made with positiveness.

2. The steps in diagnosis are the establishment (*a*) of pregnancy; (*b*) of the absence of the ovum from the uterine cavity; (*c*) of its presence in either the fallopian tube or pelvic cavity.

3. Ova destroyed by electricity in the early months of misplaced pregnancy may be completely absorbed, or so nearly so as to leave no perceptible trace at their former site.

4. The treatment of early misplaced pregnancy (previous to the 4th month) should consist in: (*a*) Before rupture, the continuous galvanic current. (*b*) After rupture into the broad ligament, if hemorrhage be slight and symptoms not urgent, the galvanic current; if considerable and symptoms be urgent, laparotomy. (*c*) After rupture into the peritoneal cavity, laparotomy.

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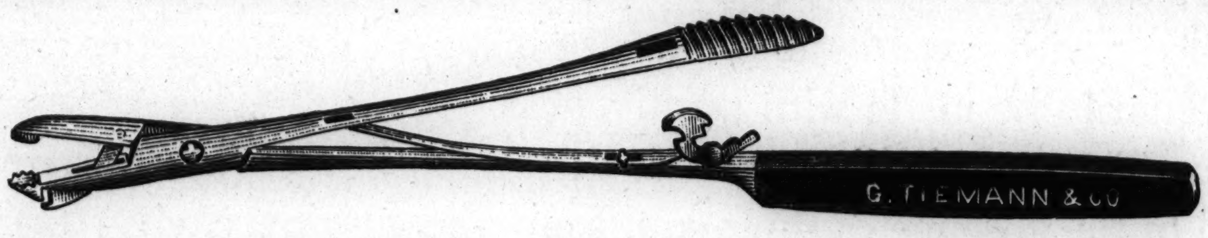
A NEW NEEDLE FORCEPS.

By JAMES H. PARKINSON, L. R. C. S. I., Sacramento, Cal.

The invention of the Hagedorn needle, and its adoption by the profession, demanded the production of a special forceps to hold the new needle. Many of these have since been placed upon the market; but all conform to the original, or Hagedorn type, in which the needle is held between two smooth steel surfaces, under great pressure. To secure this pressure the instruments are large and cumbrous, and of a size and shape impossible to carry in any pocket case. In spite of the great compressive power of these instruments, I have found it possible in every case to twist or rotate the curved needle out of the jaw; this defect is increased when the metallic surfaces are rendered slippery by blood. A very material disadvantage in connection with these forceps, is the muscular exertion required to secure and to release the smaller needles when the hand and fingers have become wearied by tedious manipulation, a difficulty usually encountered at the termination of the operation.

To obviate these defects I have devised the instrument shown in the accompanying engraving. My idea was to obtain a needle holder to fit a pocket case; which, at the same time, would securely hold any needle. After several months' experience, I am satisfied that this forceps perfectly fulfils the requirements. It is five inches in length, and weighs 265 grs. avoir. The grip of the upper jaw is similar to other forceps, and will hold any straight, curved, or half curved needle. Perforating the lower jaw of the forceps is a smaller jaw for the Hagedorn needle, this arrangement giving an under grip, and allowing the needle to be disengaged and again caught with great facility. This movement is similar in principle to the modified Russian needle forceps, and the improvement consists in throwing out a small flange on the movable jaw. This simple expedient renders it impossible for the needle to escape, and, therefore, permits the construction of a light and delicate instrument, which can be manipulated without any effort. When the forceps is closed, lateral motion is impossible. Should much resistance be encountered on introducing the needle, it will



rotate about $\frac{1}{32}$ of an inch, more or less, according to size, and then, bearing upon the flange, remains immovable. I have used the thumb catch, believing it to be more convenient than those manipulated by the fingers. The catch has two notches, allowing the largest needles to be used without straining the forceps. In accordance with the principles of antiseptic surgery, this instrument can be taken to pieces and readjusted in a moment; the handle is of hard rubber, vulcanized on, and the whole admits of perfect cleansing and disinfection. As a piece of mechanical work it is most creditable to Messrs. Tiemann & Co., the makers.

429¼ J Street.

DEPARTMENTS.

OBSTETRICS, GYNECOLOGY AND PEDIATRICS.

By WALLACE A. BRIGGS, M. D., Sacramento, Cal.

Placenta Previa.—DR. J. BRAXTON HICKS proposes the following rules for guidance in this condition: (1) After recognition of placenta previa, proceed as early as possible to terminate pregnancy. (2) When action is once begun remain by the patient. (3) If the os be fully dilated, and placenta marginal, rupture the membranes and wait to see if the head is soon pushed by the pains into the os. (4) If there be slowness or hesitation in this respect, employ forceps or version. (5) If the os be small and placenta more or less over it, the placenta is to be carefully detached from around the os; if no further bleeding occur, we may wait an hour or two. Should the os not expand, and if dilating bags are at hand, the os may be dilated. If the forceps can be admitted easily, they may be used; but if not, version by combined internal and external method should be employed and the os plugged by the leg or breech of the fetus; after this is done, the case may be left to Nature, with gentle assistance, as in footling and breech cases. (6) If the os be small and neither forceps nor dilating bags be at hand, combined version should be resorted to, leaving the rest to Nature, gently assisted. (7) If during any of the above maneuvres, sharp bleeding occur, it is best to turn by the combined method in order to plug by the breech. (8) When the fetus is dead or labor occurs before the end of the seventh month, combined external and internal version without force is the best method. If, however, we employ a routine method in all cases, version by the combined method, without force, gives as good a result, if not a better one, than any other method. The after-treatment must be conducted on modern principles; should oozing occur after expulsion of the placenta, swabbing of the lower uterus by styptics will be easy; and, inasmuch as the outlet of the uterus is liable to be blocked by adherent clots, it will be wise to irrigate the uterus daily with some antiseptic solution or to insert iodoform suppositories in the vagina.—*British Medical Journal*, November 30, 1889.

The Use and Abuse of Antiseptic Injections in Obstetric Practice.—DR. GARRIGUES considers this subject under three heads: (1) *When* *to Inject:* Before delivery, a vaginal injection repeated every three hours removes and destroys microbes enough to render the canal practically aseptic. The vulva is disinfected by rubbing with cotton saturated with the antiseptic fluid. After delivery intrauterine injections should be used (*a*) if it has been necessary to enter the uterus; (*b*) if the fetus is macerated; (*c*) in peritonitis; (*d*) after removal of the ovum in abortions; (*e*) after curetting; (*f*) in puerperal diphtheria of the uterus. Vaginal injections should be used: (*a*) when the lochia are fetid; (*b*) in vaginal diphtheria; (*c*) before curetting; (*d*) before opening an abscess—and afterwards the abscess cavity; (*e*) before removing the ovum in abortion. (2) *What to Inject:* Mercuric chloride should not be used, and is absolutely contraindicated in anemia, abortion, kidney disease and diarrhea. Creolin, in two per cent. solution, answers well, except when one wishes to judge of the condition of the interior of the womb by the appearance of the returning fluid. (3) *How to Inject:* Single current tubes are preferable to double-current ones. Immediately after delivery, it should be introduced without a speculum. Great care should be taken to go in the right direction and to the proper depth, so as to be sure to wash out the uterine cavity and not perforate its walls. As a hemostatic, use hot water, otherwise lukewarm water. For intrauterine injections, use not more than two or three pints. If the fluid cease to return from the uterus, the reservoir of the fountain syringe should be lowered and the liquid removed by gravity. Fluid remaining should be removed from the uterus by pressure and from the vagina by turning the patient on her side. The patient should always be on her back during an intrauterine injection. Fountain syringes are safer than bulb syringes and should not be elevated more than two feet above the uterus.—*Practice,* October 20, 1889.

Elastic Pressure in Inflammation of the Breast.—From a study of his own observations, DR. HORNE reaches the following conclusions: (1) Mastitis is rarely seen, except in patients who have suffered from fissured or crushed nipples, and is the result of infection. (2) As a rule, the secretion of milk continues only while the natural stimulus, as nursing, or other means, is applied. (3) The secretion of milk, both in the normal and in the inflammatory state, begins to diminish when such stimulus is withdrawn and will cease entirely within a week or two. (4) In all cases of actually or prospectively inflamed breast, well-regulated pressure by means of an elastic bandage should be applied, and no attempt should be made to nurse or remove the secretion until after the entire subsidence of the inflammatory movement. The advantages of the elastic bandage over the ordinary roller are: (*a*) It is easier of application; (*b*) the pressure is more uniform; (*c*) it is not so likely to slip; (*d*) it is more comfortable; (*e*) it need not be applied over the shoulders.—*Dublin Journal of Medical Science,* November, 1889.

The Abuse of Uterine Treatment.—Premising that other diseases, and especially those of the nervous system, are often treated as diseases of the uterus or its appendages, DR. GOODELL suggests the following helps to diagnosis: (1) Always bear in mind that "woman has some organs outside of the pelvis." (2) Each neurotic case will usually have a tale of fret or grief, of cark and care, of wear and tear. (3) Scant or delayed or suppressed menstruation is far more frequently the result of nerve exhaustion than of uterine disease. (4) Anteflexion *per se* is not a pathological condition. It is so when associated with sterility or with painful menstruation, and only then does it need treatment. (5) An irritable bladder is more often a nerve symptom than a uterine one. (6) In a large number of cases of supposed or of actual uterine disease, which display marked gastric disturbance, if the tongue be clean, the essential disease will be found to be neurotic; and it must be treated as such. (7) Almost every supposed uterine case characterized by excess of sensibility and by scantness of will power, is essentially a neurosis. (8) In the vast majority of cases in which the woman takes to her bed and stays there indefinitely, from some supposed uterine lesion, she is bed-ridden from her brain and not from her womb. This will be the rule, even when the womb itself is displaced or disordered by disease or by a lesion that is not in itself exacting or dangerous. (9) Uterine symptoms are not *always* present in cases of uterine disease. Nor when present and even urgent, do they *necessarily* come from uterine disease, for they may be merely nerve counterfeits of uterine disease.—*Medical News*, December 7, 1889.

Creolin in Cystitis of the Female.—Having found creolin a valuable remedy in cervical catarrh, and in leucorrhea, and reading of Chéron's success with it in urethritis, DR. PARVIN was led to try it in cystitis. In the first case, one of several months' standing, he used a two per cent. mixture, producing no pain and getting a very satisfactory result. The second case was acute and severe—following careless catherization. Frequent catherization was necessary and the urine was offensive and quite purulent. The bladder was washed out with a mixture of creolin, of the same strength as in the previous case. This was followed by violent local suffering, lasting several hours; the urine, however, for half a day, was free from odor and contained less pus. Next day a one and one-half per cent. mixture of creolin was used. Although the injection caused great suffering, and, on this account, was not repeated a second time, a cure rapidly ensued without the use of other remedies. Within a week the urine was *clear*, and the cystitis had vanished. Probably the strength of the mixture had somethtng to do with the rapidity of the cure, but beginning the treatment of cystitis, he would employ a weaker mixture—perhaps one-half per cent., gradually increasing the strength from day to day, as the bladder seemed more tolerant or the disease more obstinate. These cases and two others, in which he has used creolin, lead Dr. Parvin to believe that it will prove very useful in the treatment of cystitis in the female.—*Medical News*, November 30, 1889.

Resuscitation of Asphyxiated Infants.—Immediately after birth of the infant, when he sees no signs of life, DR. DUKE requests the nurse to take charge of the uterus, and proceeds thus: He does not cut the cord until pulsation has nearly ceased. Then he raises the body of the infant and, turning its face downward, with arms and legs pendant, allows the thorax alone to rest across the open palm of the left hand, and, at intervals of five seconds, compresses the ribs with his hand, as one would the bulb of a syringe. While the left hand is thus fully occupied, the position of the head allowing the tongue to fall forward and facilitate the escape of mucus from the mouth, he cleanses the lips of the infant with a napkin held by the right hand, and inserts the right index finger well into the pharynx, to establish the atmospheric highway. He then changes the infant to the right hand, so that the tips of the fingers resting near the heart will at once detect any improvement in its action. If the action of the heart is not satisfactory he plunges the infant into a large basin of hot water, rubbing the chest and back vigorously. Friction of the spine is more important, as it undoubtedly stimulates the respiratory powers. A little spirit poured over the back by the nurse, and well rubbed in, is also efficacious—in conjunction, of course, with the artificial respiration, which is to be kept up as regularly as possible.—*Medical Press and Circular*, October 30, 1889.

The Treatment of the Ruptured Parturient Uterus.—From observation and study of these cases, DR. REED reaches the following conclusions: (1) In cases of rupture of the uterus, with the head presenting, delivery by forceps should be attempted, but should be abandoned if not easily practicable. Turning should not be undertaken, but the case should be immediately recognized as one for Cæsarean or Porro operation. (2) In all cases of incomplete rupture, treatment should be by antiseptic irrigations and rest. (3) All cases of complete rupture should be submitted to abdominal section as soon as the condition of the patient with reference to shock will admit, for the following purposes: (*a*) To explore the abdomen; (*b*) to remove all foreign bodies; (*c*) to cleanse the peritoneum; (*d*) to close the rent if the labor has been short and the uterus not seriously damaged; and (*e*) to remove the uterus if labor has been long and the uterus seriously damaged.—*New York Medical Journal*, November 9, 1889.

Treatment of Spasmodic Croup with Opium.—By the term "spasmodic croup," DR. MEIGS designates all forms of croup in which false membrane is absent. In severe cases the treatment should be begun with an emetic. For this purpose, nothing is better than a teaspoonful of powdered alum mixed with a teaspoonful of syrup of ipecac. After this has acted in severe cases, or immediately in milder ones, opium and ipecac. should be ordered in doses corresponding to 20 drops of laudanum and 15 of syrup of ipecac. to an adult—a half dose to be given in an hour if necessary, and even repeated later in the night For a child of two years, the initial dose should not exceed 2 drops of laudanum and 10 of ipecac. syrup, to be repeated in an hour, or later, if necessary. The child should be kept abed the following day, and given minute doses of paregoric and ipecac., to which nitre may be added if there be fever—not enough paregoric to produce drowsiness, and not enough ipecac. to produce nausea. Laudanum and ipecac. should be given again at bedtime, and repeated during the second night if necessary; the first night's experience furnishing a guide as to the child's susceptibility to these remedies. This treatment should be continued during the second day and third night, when, unless the case be of unusual severity, the cough will loosen and danger of recurrence will be passed. The further treatment of the case should be that of coryza, bronchitis, or of whatever inflammatory process devolops.—*Medical News*, March 23, 1889. [The efficacy of opiates in controlling the spasmodic element of croup is incontestable. I prefer, however, in combination, the bromides to ipecac. and often use morphine instead of laudanum; and, in the severe cases, as well as in the milder ones, except when the stomach seems the source of reflex spasm, proceed at once to their administration without the preliminary emetic. The bromides not only reinforce and prolong the action of the opiate, but produce, perhaps, a slight anesthesia of the upper air passages. An excellent prescription for a child of two years, is the following:

℞—Tr. Opii Deodor,	2.
Ammon. Bromidi,	2.
Sodii Bromidi,	3.
Aquæ Cinnam.,	40.
Syr. Cinnam.,	ad 60—M.

Sig.—Teaspoonful as a dose, to be repeated in an hour, and again in three hours if necessary.

After subduing the spasm, unless the attack be clearly of catarrhal origin, it is important that the bowels are thorougly evacuated from above; oil, of course, being the best laxative after an opiate, followed, if necessary, by a copious enema of warm water.—W. A. B.]

SURGERY.

By T. W. HUNTINGTON, B. A., M. D., Surgeon Southern Pacific Company's Hospital Sacramento, Cal., and
J. F. MORSE, M. D., Surgeon German Hospital, San Francisco, Cal.

Flat-foot.—MR. A. G. MILLER, in the *Edinburgh Medical Journal*, divides flat-foot into two principal types. The mechanical, due to carrying heavy weights, and the atonic, due to the debility of patient and part. The first, he says, is not a disease, but only a deformity, and comes on very gradually, the tarsus being fairly borne down with the superincumbent weight. This form of flat-foot is met with in porters and those who carry heavy loads, in persons who stand much and who are unusually stout and heavy. The first symptom seems to be an aching pain across the instep or just below the external malleolus. The treatment is to support the part with some mechanical contrivance, such as a pad or steel spring in the boot, or to throw the weight of the body on to the outer side of the foot by putting a wedge-shaped piece of leather on the inner side of the sole. The patient should be directed to walk with the foot straight and try to lean on the other side. Flat-foot, he adds, may also be due to habit, and this form is noticed chiefly in adults, especially in butlers and those who go about in slippers. The atonic type is the most important form of flat-foot, being at once the most painful and the most difficult to treat. Indeed it is the only form that can truly be called a disease. Those generally affected are young, delicate boys and girls, who have to walk much, carry weights and are poorly fed. If only one foot is affected, it is turned out more than the other in standing and walking. It is carefully saved when the patient is standing and he will limp on it when walking. There will be pain, of a dull, aching character on the inner side of the foot just behind and below the tubercle of the scaphoid. This is due to the inflamed condition of the calcaneo-scaphoid ligament. The diagnosis is usually easy. The aforesaid pain is quite characteristic. The patient looks ill-fed, overworked, tired and unhappy. The leg is flabby and thin; the foot soft and unnaturally plastic. As regards treatment there is little to be done except to administer tonics to the system and to the part. The best of all is rest, combined with change of air and healthy exercise. Iron, quinine and strychnine may be given internally, while gymnastics should be practised to increase the tone and power of the tibial muscles and other supporters of the tarsal ligaments. In conclusion, the author states his belief that without relief to the overstrained ligament, and toning up of the system and limb, no cure can possibly be effected.

Lister's New Antiseptic.—SIR JOSEPH LISTER believes that he has found the ideal antiseptic in a double cyanide of zinc and mercury, and enumerates its advantages as follows: (1) It is non-volatile. (2) It is almost entirely unirritating. (3) It is insoluble in water and only soluble in 3000 parts of bloody serum. (4) While it possesses but little germicidal value, its inhibitory power is so high that a solution of 1:2000 is sufficient to keep animal fluids permanently free from putrefaction. This combination of qualities is possessed by none of the antiseptics which have been used; and the deficiency in germicidal power is easily remedied by including in the gauze, which is impregnated with this material, a small percentage 1:4000 of sublimate, enough to be germicidal, but too weak to be markedly irritating. His method of preparing the gauze is as follows, the proportions being for twenty pieces, each six yards in length: A mixture of zinc and mercury salt and of water is made in the proportion of 800 grains of the former to 28 pints of the latter. The gauze is drawn through this mixture slowly and in such a way that it will be completely submerged. The excess of liquid is then pressed out, and it is dipped in a bath composed of starch 400 grains, boiling water 3 pints, mixed together, diluted with 11 pints of cold water, and then still further diluted by the addition of 15 pints of a 1:2000 sublimate solution. The reason for this last or starch bath is that the double cyanide, if allowed to dry in the gauze without the admixture of starch, will fly out as an impalpable powder whenever handled; whereas, with the starch, it makes a mixture which, while not a chemical compound, seems to be a very intimate association of the cyanide with the starch, the latter holding it in the meshes of the gauze. The bichloride is added for the sake of its germicidal action. The gauze, when taken out of this bath, is laid for a few moments between the folds of a perfectly clean sheet, which absorbs the excessive moisture, and is then folded and ready for immediate use. Or it may be dried and used, after moistening with the 1:4000 sublimate solution. Lister recommends another method, which is still more simple. A strong solution of starch is mixed with the double cyanide powder, and after this a quantity of sulphate of potash, which is inert, and is used in this connection just as it is used in Dover's powder, for the sake of the mechanical effect produced by its gritty particles. Take, if it is desired to impregnate 20 pieces of gauze, each 6 yards in length, 800 grains of the double cyanide. Stir it into a strong solution of starch made with warm water, until it is almost pasty in consistence, add two or three tablespoonsful of sulphate of potash, and allow the mixture to dry; powder and diffuse it in a 1:4000 solution of bichloride, enough being employed to permit of the thorough immersion of all the gauze. The excess of sulphate of potash is practically gotten rid of in this watery solution, but if it were not it would do no harm, as it is inert. The gauze should then be carefully drawn through this mixture, which is stirred up, the material is deposited in the meshes, and should be dried between a folded sheet, if it is needed for immediate use, or over a line in a clean room free from dust. If the latter plan is adopted, it should be moistened again with a 1:4000 bichloride solution just before using.—*British Medical Journal*, November, 9, 1889.

OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

By Wm. Ellery Briggs, M.D., Sacramento, Cal.

The Hearing of School Children.—Dr. Thomas Barr has found, with other investigators, that the average percentage of children in the schools examined who had defective hearing power was nearly twenty-three, and he also found "twice as many with defective hearing among backward children as among forward children." Dr. Barr formulates his conclusions as follows: (1) Teachers should keep in view the fact that in every class of fifty children there are probably about a dozen or more who have some defect of the hearing, and are, therefore, placed at a disadvantage as compared with their normally hearing fellows. (2) Children who are known to suffer from defective hearing, should always occupy a position on benches nearest the teacher; and if the defect is limited to one ear, the children should be placed so that the better ear shall be turned to the teacher. (3) Children whose hearing is extremely defective, or who are totally deaf, should not be placed in the ordinary classes, but should be taught in a separate class by one who is qualified to teach the German method of articulate speech and lip reading. (4) In cases of children whose progress is unsatisfactory, and who are inattentive, dull, and idle, the capacity for hearing should be ascertained by proper tests, and if defective hearing is found, information of the facts should be sent to the parents, and the children's position in the class so arranged as to minimize the bad effects of the defective hearing. (5) If the ear disease from which the child suffers is attended by a discharge of matter from the interior of the ear, the child should cease to attend school until a doctor's certificate of fitness is furnished by the parents. (6) In all schools the head-masters should issue stringent instructions to the assistants, that boxing the ears must never, on any account, be practised on children. (7) In construction of new schools, the class-room should not exceed twenty feet in length or breadth, their shape should be that of a parallelogram, with a long side of twenty-five feet and a short one of fifteen feet, the teacher occupying the centre of one of the short sides, and that the number of scholars in one class and room should not exceed fifty. If, as is frequently the case, the teacher stands in the centre of the parallelogram, especially in a long room, the children to the right and left are badly situated for hearing. (8) In the selection of a site for a new school, a position should be chosen as far removed as possible from noisy works or main thoroughfares; the class-room should be situated as far as practicable from the public street, and they should not lead off main staircases. (9) The walls separating class-room from class-room, or from a stair-case, should be sufficiently thick, and of such material as to form bad conductors of sound. Wood, especially fir, is obviously unfitted to enter into the construction of such partition-walls. (10) In order to guard against colds in the head, a common source of deafness in school children, class-rooms should be supplied with sufficient appliances for ventilation to do away with the necessity of opening windows when the class-rooms are occupied by the children.—*British Medical Journal.*

Naphthalin and Cataract.—DR. KOLINSKI, in *von Graefe's Archives*, points out that naphthalin, which is coming a good deal into use for the effect it seems to have on the microörganisms existing in the intestines in some cases of diarrhea, possesses also the property of producing changes in the nutritive power of the blood, thus being liable to set up degeneration of the blood vessels. As the eye is one of the most highly vascular organs, it is one of the first to show any of the changes induced by interference with the nutritive property of the blood. Naphthalin is said, first, to cause small extravasations in the choroid and in the ciliary body, then ecchymoses and white patches in the retina, and, finally, cloudiness in the lens and crystals in the vitreous.—*American Journal of Medical Sciences*, January, 1890.

Clinical Illustrations of Reflex Ocular Neuroses.—There has been much written the past few years, in regard to the influence of anomalies of refraction and accommodation of the eye. To these causes and muscular anomalies, many neuroses have been clinically traced. DR. GEORGE M. GOULD reports several cases in which the correction of ocular defects relieved the patients of more profound nervous trouble than had been generally attributed to eye defects. The first case was a lad of 11 years of age who, for five years, had had alternate convergent strabismus, and had suffered from persistent headache. He was also the subject of continuous stammering; the pronunciation of almost every word was attended with grimaces and repeated efforts. The instillation of atropine almost relieved the stammering and headache. The use of convex 1.50 D. glasses overcame the strabismus and headache, and there was hardly a trace of the stuttering left. The second case was a girl, aged 14, whose symptoms suggested hysteria. The principal complaint was of "blind spells," occurring several times a week, and lasting from half an hour to an hour. During these paroxysms there was frequently violent emesis, particularly if she opened her eyes. Headache preceded the severe symptoms a day or so. This had continued for five years, the paroxysms of late growing more frequent and lasting longer. The attacks were also accompanied by a strange numbness, with loss of power and control of the feet, arms, hands, and face; but the loss was greatest in the tongue and mouth. There was also loss of appetite and memory. An examination showed a high degree of hyperopia with slight astigmatism, but no insufficiency. Five months after correcting glasses were prescribed she had a regular and good appetite, looked healthy, and was happy at the relief from her many ills. The third case was a girl, aged 11, with chorea of two years' duration, due to hyperopic astigmatism.

She had been treated at two of the best hospitals for "St. Vitus' dance." Glasses were prescribed and all other treatment was discontinued, with the effect of removing all the nervous symptoms. The disposition was improved, the choreic, gastric trouble, headache and involuntary crowing or talking had disappeared soon after her first use of the glasses. Case five was that of a young lady who for seven years had been the subject of unaccountable attacks of loss of voice. These would usually come on every few days, lasting from a short time to several weeks. The patient selected and wore spectacles for a year. During this time she had no loss of voice. She had severe "cramps of the eyes"—blephorospasm—with which came also the old-time loss of voice. During this long period of seven years the patient had suffered also from frequent attacks of sick headache, and great gastric derangement. The glasses that had been worn partially corrected the hyperopia, but left the astigmatism and insufficiency without relief. Convex spherical astigmatic and prismatic lenses were prescribed, and three months after their adjustment there had been no loss of voice, sick headache, vomiting, chorea, etc., with which the patient was previously afflicted.—*American Jour. of Medical Sciences*, January, 1890.

SYPHILIS AND VENEREAL DISEASES.

By G. L. Simmons, Jr., M. D., Sacramento, Cal.

AND

DERMATOLOGY.

By D. W. Montgomery, M. D., Professor of Pathology, University of California, San Francisco.

Syphilis of the Heart.—T. Lang bases his observations on 44 cases, and arranges the subject under four heads: syphilitic endocarditis; syphilitic myocarditis; syphilitic pericarditis; and syphilitic neoplasms. Syphilitic endocarditis occurs but seldom alone, and is usually associated with myocarditis. It attacks the parietal, as well as the valvular endocardium, having a lesser predeliction for the former, than non-syphilitic endocarditis. It occurs in the auricles, as well as in the ventricles, and is most frequently seen, at least in the extrauterine period of life, in the left ventricle, in the apex of the heart, and on the ventricular septum next to the aortic opening. A differentiation in symptomatology between syphilitic and non-syphilitic endocarditis is not possible. The prognosis is very unfavorable. Treatment is specific and symptomatic. Syphilitic myocarditis is always partial; occurs in the adult seldom earlier than the second year of the infection; either in the myocardium, spreading from thence onto endocardium or epicardium, or the process originating in the endocardium spreads to the myocardium. The forms to be distinguished are a fibrous or interstitial, and a gummous syphilitic myocarditis; this last is often combined with a fibrous myocarditis. As long as the attack on the muscular substance is light, or is compensated for by hypertrophy, there will be no gummatous detritus in the heart cavities, and the nervous apparatus of the heart will not be interfered with. Syphilitic myocarditis often runs an unsuspected course, until shortly before the death of the patient. The first symptoms observed are: oppression, shortness of breath, feeling of anxiety, precordial pain, called into prominence by the obstruction in the pulmonary circulation. It is of importance to notice that syphilitic myocarditis often leads to embolism and thrombosis, especially in the vessels of the brain. The course is tedious; frequently the subject dies through a sudden accidental occurrence—at times during efforts at stool. Diagnosis is difficult—prognosis, at best, unfavorable—the treatment is directed mainly to the alleviation of suffering, and warning the patient against all dangerous conditions. The pericardium is seldom the seat of primary syphilitic inflammation; the disease is usually transmitted from the myocardium. The inflammation favors certain portions, but can involve the entire pericardium and obliterate the pericardial cavity. It is, also, divided into a chronic fibrous and a gummatous form. At first, there are no symptoms to indicate the presence of syphilitic pericarditis, but later, the complication with myocarditis, aids us in the diagnosis. A syphilitic neoplasm in the heart has been observed but once and then by Kautzow and Virchow. It proved to be a congenital syphilitic myoma.—*Centralblatt f. klin. Medicin*, October 12, 1889.

Treatment of Masturbation.—A correspondent of the *British Medical Journal*, writes: There is a plan of treatment apparently little known, but completely successful in cases in which the habit is a nocturnal one. A "cage" is carefully fitted over the genitals by an instrument maker, and kept in place by straps, which are secured by small locks. In the case of children, the parent keeps the key. It is equally valuable for older youths, or men, who unwillingly find themselves overpowered at night. In such cases, the key, after locking the straps, is placed some distance from the bedside, and before it can be used the temptation has passed.

Salol in Blenorrhagia.—DREYFOUS says (*Gazette des Hôpitaux*, November 26, 1889): Theoretically, salol acts on the kidneys, bladder, and urethra as an antiseptic; exactly as naphthol does upon the intestines. Practically, he has given salol, both alone and mixed with balsams, in seven cases. The drug was administered in doses varying from five to eight grammes, and produced in all a modification of the discharge. In a recent case, dating from the fourth day, a complete recovery took place in three days. He believes it to be efficacious when given alone, but copaiba or cubebs associated with it accelerate the recovery.

A Test for Urinary Fistulæ.—M. LE FORT makes use of a chemical reaction to establish the connection of suspicious fistulæ with the genital tract. He injects into the bladder by means of a catheter, a solution of iodide of potassium, weakened so as to produce no irritation. The fistulous openings are plugged with the acetate of lead. The catheter is retained in the bladder, preventing the outflow of urine. If the fistula is vesical, the acetate of lead takes on a yellow coloration. If it does not, the catheter is partly withdrawn, the patient is ordered to pass water, the catheter obstructs the flow through the entire length of the urethra, and if the fistula opens into the posterior urethra there is a discoloration of the acetate of lead at the external opening of the fistula. In this way the exact location of the internal opening, and the fistulous character of the channel may be determined. To show how rapidly this reaction may take place, even though the iodide of potassium is administered through the stomach, M. le Fort, in the case of a child with retroversion of the bladder, touched the orifices of the ureters with a little acetate of lead, and gave a dose of potassium iodide to the infant. In ten minutes after its ingestion a yellow color appeared on the openings of the ureters. This method may also be used to determine vesico-vaginal fistula.—*Gazette des Hôpitaux*, December 10, 1889.

Obesity and Sterility.—In the *Révue Gênérale de Clinique et de Thérapeutique*, DR. PHILBERT gives some interesting facts concerning the relation of obesity to sterility, and the favorable results obtained by hygienic measures for the reduction of fat. In the male, excessive embonpoint retards the development of the genital organs, producing atrophy in certain cases. After adult age, polysarcia notably diminishes sexual desire, which returns with the loss of superfluous flesh. In the female, amenorrhea and dysmenorrhea result from excess of fat. An accumulation across the abdomen exerts mechanical pressure that impedes utero-ovarian functions. Possibly ovulation fails of accomplishment through defective nerve excitation.—*New York Medical Journal*, November 9, 1889.

Epidemics of Herpes Zoster in Vienna.—Although zoster occurs as a sporadic disease the whole year through; still, in large clinics, it has been noticed that the cases have a tendency to accumulate at certain seasons, so that we sometimes, in this sense, can use the term epidemic. In Vienna the greatest number of cases occur in the months of March and April, October and November; seasons in which, also, the greatest number of cases of erysipelas and croupous pneumonia occur; diseases which are now recognized as having an infective origin. In speaking of zoster as a disease depending upon a particular living organic poison, we of course only include the so-called spontaneous or idiopathic zoster, and carefully segregate those cases having a direct mechanical, or a reflex origin. The opinion that idiopathic herpes zoster is an infective disease, is based on the following analogies to disorders which are now generally recognized to be infective: (1) The occurrence of zoster in groups of cases, as small epidemics. (2) The regular recurrence of such epidemics at certain seasons, viz.: in spring and autumn. We can easily imagine that the climate at such times may be particularly favorable to the ripening of the spores of the disease. (3) The fact that it is exceedingly rare to suffer from the second attack. (4) In all infective diseases, such as measles, scarlet fever, small-pox, and typhoid fever, it has been noticed that epidemics differ widely in their intensity, being sometimes mild and sometimes severe. It was noticed that the last group of cases of zoster in Vienna was particularly mild, the patients rarely suffering from more than one patch of vesicles, and neither hemorrhage nor gangrene being observed in any of the cases. The sensory disturbances were equally mild; in no case was neuralgia complained of. These arguments point strongly to zoster being an infective disease; but, on the other hand, how are we to account for the fact that a poison, which we must imagine taken into the blood and distributed to all parts of the body, should attack a single nerve ganglion, or a few neighboring ganglia, avoiding all the others? All that we can say is, that we have analogies in the zoster occasioned by carbonic oxide gas poisoning (repeatedly observed by Leudet, fils; also a case of zoster ophthalmicus occurring after poisoning by the same gas, reported by Sattler), and in the zoster occurring during the administration of arsenic, first brought to the notice of the profession by Hutchinson, and since repeatedly observed by many authors. Here the poison enters the blood and is distributed to all parts of the body; still, only one or two ganglia suffer in such a way as to occasion herpes zoster.—KAPOSI, in Transactions of the German Dermatological Association, 10–12 June, 1889. —*Ergänzungs Heft zum Archiv. f. Determatologie und Syphilis.*

Spontaneous Involution of Sarcoma.—At the last meeting of the American Dermatological Association, DR. HARDAWAY reported a case of spontaneous involution of sarcoma. He had made the clinical diagnosis, which was confirmed by a microscopical examination by Dr. Heitzman. In 1883 the lesions were numerous, principally on the hands and feet. The tumors were deeply pigmented, and there was extreme implication of the lymphatic glands. In 1884 a number of new tumors had formed on the backs of the hands and feet. Now, fifteen years after the commencement of the disease, the tumors have all disappeared, leaving merely an atrophic condition of the skin, and the patient is enjoying good health.—*Journal Cutaneous and Genito-Urinary Diseases*, Jan., 1890. [One of the most noteworthy and fortunate circumstances about the case is that the patient had not received a course of arsenic, nor, in fact, of any other drug.—D. W. M.]

Keratosis Follicularis.—In June, 1889, DR. JAS C. WHITE, of Boston, described, independently, a disease which he called "keratosis follicularis." In March, of the same year, M. DARIER, of Paris, described the same disease under the designation "psorospermose folliculaire végétante," and called attention to certain highly refractive bodies present in the diseased tissue, which he regards as parasites, and the cause of the disease. These are contained in the epithelial cells, either as round bodies or as refractive granules, and their accumulation gives rise to the horny masses projecting from the mouths of the sebaceous glands, which constitute the clinical characteristic of the disease. According to both Darier and Wickham, this disease should be classified etiologically with Paget's disease of the nipple, and possibly with molluscum contagiosum. The two cases described by White were father and daughter, therefore, both heredity and contagion had to be considered. The theory of its transmission by contagion was greatly weakened by the fact that the father had not seen his daughter since she was a year old, that is, four or five years before she manifested signs of the disease. DR. JOHN T. BOWEN carefully examined sections of the lesions in both of White's cases, and found the peculiar refractive bodies described by Darier. He also, for camparison, examined sections of flat epithelial cancer, and of common wart, and in both these latter found similar cells. Attempts at cultivation on agar-agar, in water, and on bouillon, failed to give a positive result. He concludes that while many good reasons have been offered by Darier for considering that these bodies may be parasites called coccidiæ, still, so little is known of the coccidiæ, and it is so difficult to diagnose them from the tissue cells that stronger proofs must be forthcoming before admitting that they belong to this class. With regard to the question whether these bodies are found in every case of the disease, Dr. White assumes that, having been found in all four cases in which they were sought for, it is fair to assume their presence in all future cases. It is impossible to assert that they were present in all the lesions of the first case, because of the great number of affected follicles, but as they were found in all the lesions examined, it is probable they were uniformly present. That these bodies are parasites is a question at present impossible to answer, and even if they are parasites, they may be harmless, and may not be the cause of the disease. If they are parasites, it is altogether probable that they do cause the disease; but it must not be forgotten that large parasites, such as the acarus folliculorum, may live in the skin without causing any disease whatever. As to its infectiousness, the data are of a negative character, but if it is, it is only so in a very slight degree. The fact that Darier, Wickham and Bowen have found the same bodies in many skin diseases, the clinical courses of which are wholly dissimilar, speaks very decidedly against them being the cause of this particular lesion. Dr. White thinks the question still an open one, and that more data should be obtained before accepting all the conclusions advanced by Darier.—*Journal of Cutaneous and Genito-Urinary Diseases*, Jan., 1890.

MATERIA MEDICA AND THERAPEUTICS.

By WM. WATT KERR, M. A., M. B., C. M., Professor of Clinical Medicine, University of California, San Francisco.

Chloride of Ammonium in the Treatment of Chronic Bronchitis and of Winter Cough.—DR. MURRELL contributes to the *Medical Press and Circular*, Nov. 6, 1889, an interesting article upon this subject, of which the following is an abstract: The value of chloride of ammonium in the treatment of affections of the respiratory organs is very generally recognized. From time immemorial it has been given in the form of mixtures, often in combination with carbonate of ammonium, seneca and other drugs. Its pungent saline taste can be disguised by the addition of a little liquid extract of liquorice, say half a drachm to the ounce. Compressed tabloids of chloride of ammonium are useful in many catarrhal conditions of the fauces and pharynx, and are largely employed by singers and public speakers. When the action of the drug on the larynx, trachea, or bronchial tubes is required, a different mode of administration must be resorted to, and the drug is then inhaled in the form of fumes, or smoke developed by the combination of the vapors of hydrochloric acid and ammonia. Many forms of apparatus have been devised for generating nascent chloride of ammonium, but by far the best is that of Vereker. I generally detach the India rubber tubing leading to the mouthpiece, and substitute for it a piece three or four yards long. The advantage of this is that the patient is not obliged to bend over the apparatus, but can sit back in his chair, or stand up and take a good deep inspiration, completely filling the chest. Some patients do not know how to breathe, but take little puffs which are no good, but a few minutes instruction and a practical illustration or two usually sets this right. Patients sometimes complain that the fumes are acid, and that they cause choking. As a matter of fact, a little excess of acid rarely does any harm, whilst an excess of ammonia is very irritating. The method for avoiding an excess of ammonia is simple. Put into the wash bottle a little tincture of litmus and a few drops of acetic acid. As long as the water is colored red, there is no fear of any uncombined ammonia coming over, as it is seized by the acetic acid. When the water turns blue, a little more acetic acid must be added. In cases of catarrhal deafness, the fumes are readily forced up the eustachian tubes by filling the chest and mouth, pinching the nose, and then swallowing. Sometimes I use the chloride of ammonium fumes alone, but far more commonly I employ them as a vehicle for the administration of other remedies. For example, I want to give pure terebene in a case of winter cough. All I do is to put a few drops on a piece of absorbent cotton wool, and introduce the little pellet into the water of the wash bottle. The fumes which come over are impregnated with pure terebene, and are carried to the innermost recesses of the bronchial tubes. In the same way I give inhalations of oil of cubebs, oil of sandal wood, and various other volatile drugs which exert a beneficial action on the respiratory apparatus. I have cured in this way obstinate cases of bronchial catarrh, chronic bronchitis, post nasal catarrh, and deafness resulting from obstruction of the eustachian tube. For the last three years I have employed this chloride of ammonium inhaler in a large number of cases, and the results, I am glad to say, have been almost uniformly successful. I have used it with equal benefit both at the hospital and in private practice. At the hospital the patients come every day for ten days or a fortnight, and the inhalation is superintended by one of my clinical assistants.

The Relation of Drugs to the Secretion of Bile.—As is well known, there is no therapeutic question in regard to which so much doubt and disagreement prevail as that relating to the action of drugs on the biliary secretion. PREVOST and BINET have published the results of exhaustive inquiries into the subject. Bile itself they find to be the most powerful cholagogue, whether given in the natural state, or in the form of a dry extract. Bile is also toxic in sufficient doses subcutaneously, and will produce death, with symptoms of collapse. The following substances these observers have found to increase the flow of bile: oil of turpentine and terfene, chlorate of potassium, benzoate and salicylate of sodium, salol, euonymin. Substances producing only a slight or doubtful and inconstant increase are: alkaline salts, Carlsbad salts, antipyrin, aloes, cathartic acid, rhubarb, hydrastis canadensis, ipecac. and boldo. The cathartic and the alkaline salts, which Rutherford considered cholagogue in non-cathartics doses, these observers found lacking in any such power. Substances diminishing the secretion: iodide of potassium, calomel, iron, atropine and strychnine. In regard to calomel, they have not been able to confirm Rutherford, who believed that whatever cholagogic action calomel had was owing to its transformation into corrosive sublimate. Corrosive sublimate, given by itself, produced no increase in the flow of bile.—*Boston Medical and Surgical Journal*, November 21, 1889.

Olive Oil in Gall-stone Colic.—In an interesting article upon this subject DR. D. D. STEWART suggests that the beneficial effects attributed to the oil are more likely due to a product of its chemical decomposition, glycerine. That oils and fats are decomposed in the duodenum into their fatty acids and glycerine there seems no doubt, and this decomposition is probably effected by the pancreatic juice through the action of a fat-splitting ferment, steapsin. The ingestion of a large quantity of oil is followed by the presence in the feces of innumerable masses of soap, formed no doubt by the union of the two fat acids with the alkali of the pancreatic juice and the bile. It would appear not improbable that glycerine so liberated exerts in the duodenum an action similar to that which takes place when it is introduced into the rectum; withdrawing water, and causing hyperemia and irritation of the afferent nerves of the parts with which it comes in contact, thus leading to powerful reflex peristalsis. The contraction would extend from the duodenum to the gall bladder, cystic and common bile ducts, so that concretions lodged therein, sufficiently small to be expelled, would be rapidly passed onward into the bowel. It is not unlikely that the power of diffusion possessed by glycerine would enable it to enter the ductus communis and even the cystic and hepatic ducts, and perhaps, reach the gall bladder and the liver, producing a similar depletion of the vessels there and, reflexly, exciting the muscular fibres of these ducts to contract. In consequence of this action of glycerine a copious outflow of diluted bile would also probably occur, which would materially assist in expelling the stone. If the theory suggested as to the action of the oil is correct, the method, as now practised, is open to many sources of failure. Glycerine may not in all cases be formed in sufficient quantity to exert its peculiar effects. A free flow of pancreatic juice is necessary for the splitting up of the oil. Belladonna, or its alkaloid, atropine, much resorted to in hepatic colic, suppresses the pancreatic secretion, and, consequently if full doses be given before the oil, the result will be *nil.* Any fluid taken with the oil may so dilute the glycerine formed in the duodenum that its hygroscopic effects on this part will be prevented. It would, I suppose, be useless to administer glycerine by the mouth with the idea of obtaining the result anticipated from the oil; for, because of the hygroscopic properties of glycerine, on which would depend its action, sufficient fluid would be absorbed from the gastric vessels to render it too dilute to be efficient when it reached the duodenum.—*Medical News*, November 23, 1889.

MEDICINE AND PATHOLOGY.

By ALBERT ABRAMS, M. D., Demonstrator of Pathology, and Adjunct to the Chair of Clinical Medicine, Cooper Medical College, San Francisco, Cal.

Diabetes Mellitus.—In a previous number of this journal (vol. iii, p. 547) reference was made to the experimental researches of MINKOWSKI, who succeeded in producing permanent diabetes in dogs, after extirpation of the pancreas. Together with v. MERING, he has extended his investigations, and finds, that partial removal of the pancreas or ligation of its duct, is not followed by diabetes. An absence of the pancreatic secretion from the intestines, is not responsible, as this experiment demonstrates, for the development of diabetes, but that the latter is directly due to the removal of the pancreas, to which must be attributed the specific function of consuming the sugar in the organism. This is the only experimental diabetes which tallies with the disease in man. The frequency of diseases of the pancreas, in connection with diabetes, has long been recognized; and it can no longer be questioned, that certain cases of diabetes can be directly traced to pancreatic disease. It is also likely, that in all cases of diabetes, a disturbance in the functions of the pancreas exists. Functional disturbances of the pancreas from nerve lesions, toxic influences, and circulatory changes can lead to glycosuria. Glycosuria is an expression of functional derangement of the pancreas, and is similar in this respect to albuminuria, which indicates functional disturbance of the kidneys. --*Muenchener medicin. Wochenschrift*, November 12, 1889. [Attention must be directed to another form of experimental diabetes produced by M. M. SEE and E. GLEY, in dogs, by administering one gm. doses of phloridzine to 1 kgm. of the animal, the urine containing from 10 to 12 per cent. of glucose. The same doses of phoretine will only produce 1 per cent. of glucose in the urine.—A. A.]

DR. C. DECKER considers the undecided question, whether diabetes exists on a syphilitic basis, or if in the course of constitutional syphilis, the development of diabetes is only an accidental complication. Lesions of the central nervous system can be followed by diabetes mellitus. Not only does glycosuria result from a lesion in the floor of the fourth ventricle, as Claude Bernard first demonstrated, but also from lesions of the pons, thalami and other parts of the encephalon. Dr. Decker no longer doubts a syphilitic etiology of diabetes, when he considers the tendency of constitutional syphilis, to establish pathological processes in the different parts of the central nervous system. Leyden observed 11, Schulte 2, Eulenburg 1, and Frerichs 3 cases of syphilitic diabetes mellitus. Decker also reports a case of this affection occurring soon after the primary inoculation. The diabetes mellitus, in this case, was cured, after a treatment consisting essentially of mercurial inunctions.—*Deutsche med. Wochenschrift*, November 14, 1889.

In an extensive article on coma diabeticum, replete with clinical and experimental investigations, STADELMAM considers the probable cause to be an acid intoxication of the organism, which he combats by the administration of alkalies. Although 11 cases of diabetic coma are cited, where the treatment was essentially alkaline, the results were decidedly unfavorable. In nearly all cases, temporary improvement was noted, consisting of a return to consciousness, which, however, was only of brief duration. The following conclusions are formulated: (1) Coma diabeticum (excluding coma from other causes) only occurs in diabetes when oxybutyric acid is demonstrated in the urine. (2) The determination of ammonia in the urine is more easily accomplished, and is equally important, as the demonstration of oxybutyric acid. (3) When more than 1.1 gm. of ammonia is excreted by diabetics in one day, the danger of severe diabetes is to be apprehended. (4) When 2, 4, 6 gm., and more, of ammonia are excreted in 24 hours, the patients are likely to die in coma. (5) When the determination of oxybutyric acid and ammonia is impracticable, then the chloride of iron test should, at least, be employed. If the latter test is positive, then conclusions 3 or 4 hold good, although cases of diabetic coma occur, with no chloride of iron reaction of the urine. (6) When the chlorate of iron reaction is present, or when oxybutyric acid or an increase in the excretion of ammonia is shown, the patient must be subjected to an absolute meat diet and alkalies administered according to any of the following formulæ:

1.	Acid. Citric.	8.0
	Natr. Carbon.	18.0
	Saccharini,	0.1 —.02
	Aquæ Destill.	150.0
	Spirit. Menth. Piper.	gtt. iii—M.

This quantity to be taken 2 or 3 times in 24 hours.

2.	Natrii. Acet.	10.0
	Aq. Carbon.	90.0
	Saccharini,	0.1
	Essent. Citri.	2.5—M.

This quantity to be taken 3 or 4 times in 24 hours.

(7) When coma is apprehended, alkalies in large quantities must be given at certain intervals, at the same time keeping the patient under careful observation. (8) When diabetic coma is present, then intravenous injections of carbonate of soda (1 to 10 per cent.) in a physiological solution of salt, must be made without delay. The infusions are to be carefully repeated until the urine is alkaline. (9) Subcutaneous injections of carbonate of soda should be rejected, inasmuch as they are painful and lead to phlegmonous inflammation.—*Deutsche med. Wochenschrift*, November 14, 1889.

The Theory and Treatment of Rachitis.—KASSOWITZ (*Wiener med. Wochenschr.* No. 28) explodes the usually accepted theories, that a deficiency of lime in the food, or imperfect absorption of lime salts, in consequence of gastro-intestinal disturbances, are the causes of rickets, although he admits that they favor a continuance of the disease. Anatomical investigations show not only a deficiency of lime in the bones, but an excessive vascularity, the result of inflammatory processes. This inflammatory hyperemia of the osseous structure is the essential factor in rachitis and not the deficiency of lime. The treatment consists in improving the hygienic conditions, especially change of air. The administration of lime preparations is valueless, the ordinary food and cows' milk containing sufficient lime salts. He also condemns the practice of prohibiting an amylaceous diet, which is an excellent substitute for milk, whereas a meat diet conduces to digestive disturbances. He recommends phosphorus in consequence of the discovery of Wegner, that phosphorus in small quantities inhibits vascular formation in the bones of growing animals. Phosphorus counteracts the hyperemia of rachitic bones, which is the real cause for the delayed precipitation of lime. The brilliant results attained by Kassowitz fully warrant the employment of phosphorus in rickets, which is as much a specific in this affection as mercury in syphilis. He reports 25,000 of his own cases benefited by the phosphorus treatment. Numerous other observers have corroborated his results. The remedy, which is usually well borne, is given in cod liver oil, in doses of ½ mg.—*Berliner klin. Wochenschrift*, November 18, 1889.

Chronic Peritonitis.—DR. A. JACOBI, in a paper upon this subject read before the New York Academy of Medicine, says that most of the cases are of a secondary nature, and that, perhaps, the most frequent cause is a preceding peritonitis. He did not remember a case of perityphlitis that did not exhibit the evidence of a former peritonitis. He believes that there are few, if any, cases of foreign bodies entering the vermiform process, unless the latter has previously lost its elasticity and contractility by an inflammatory change. Alterations of the intestinal mucosa constitute the initial stages of local peritonitis in many instances, and of general peritonitis in some. A mere diarrhea is able to develop a local peritonitis by an extension of the inflammatory process to the serous layer. No morbid process in a locality supplied with an active circulation can remain isolated. The diagnosis of chronic peritonitis is frequently missed. Adhesions may exist without recognizable symptoms. A chronic peritonitis is sometimes diagnosed as follows: "The patient is on his back, with the extremities now extended, now flexed. Pressure of various kinds, light or firm, sudden or gradual, superficial or deep, is tried in the usual way. According to the seat of the pain experienced, inflammation or adhesion is made manifest. In many cases, however, the following manipulation answers best: With the palm or finger, deep pressure is first made. Perhaps there is no pain. Remove the pressure suddenly, and a local, very distinct and circumscribed pain may be felt. Repetition of the experiment will always give the same results, the symptoms being elicited by the sudden change in the relative position of the bowels. Not only pain, but the presence of hard, floating exudations can be distinguished by this and similar maneuvres." The writer also refers to tabes mesenterica, of which several distinct forms exist, attended with varying anatomical alterations. Besides the simple hyperplasia of the mesenteric glands, resulting in obstruction and tubercular infiltration, terminating in the same disturbance of functions, there was a third condition, chronic tubercular peritonitis. The diagnosis of the latter was rendered more probable by the history of the case and the existence of pulmonary symptoms. The possibility of recovery, or partial recovery, in chronic peritoneal tuberculosis, was not excluded.—*Boston Medical and Surgical Journal*, October 31, 1889.

Neurasthenia of the Heart.—LEHR divides the forms of this affection into toxic, reflex, and traumatic. Tobacco and alcohol are the principal factors in the production of the first form. All conditions which conduce to neurasthenia may, also, induce cardiac neurasthenia, such as mental strain, anxiety, and excesses. The traumatic form is due to psychical shock, and the attending loss of blood. Males are more often affected, and usually between the ages of 16 and 36 years. The main symptom is palpitation of the heart. Patients complain of a sensation of pressure and tension in the precordial region, together with fullness of the head, insomnia, and malaise. After slight exertion, severe cardiac palpitations supervene, attended with fear and disquietude; pulse 96—100, full, and tension increased; strong pulsation of the carotids and peripheral arteries. Such attacks cease after a few minutes, leaving the patient in a condition of exhaustion. The intervals between the attacks gradually become less frequent, and the sensation of pressure in the precordial region, together with irregularity of the heart's action, and sleeplessness are always present. The semeiology of the reflex form tallies in the main with the form described. The prognosis of this affection is, as a rule, good. The treatment consists in the removal of causes, and combatting the neurasthenia. This is accomplished by the use of baths of a temperature between 20° and 30° C., and from 1 to 5 minutes duration. The sea baths reduce the pulse frequency, diminish blood pressure, and quiet the patient. Severe cases demand energetic cutaneous irritation, and douches upon the body. Gymnastics and electricity are usually without effect. Galvanization of the heart itself can be of value. Preparations of iron may be used to advantage, owing to the complicating anemia.—*Wiener klin. Wochenschrift*, November 7, 1889.

The Prophylaxis of Tuberculosis.—At a recent congress of Bavarian physicians, the following conclusions were accepted: (1) Tuberculosis is an infectious disease. (2) In addition to infection, heredity and disposition must be considered as etiological factors, until further observations and experiments prove the contrary. (3) The prophylaxis must consist in public and private hygiene. (4) In all evident cases of tuberculosis in public institutions, isolation of the patients must, if possible, be enjoined. (5) Children with developed tuberculosis must be excluded from schools. (6) Sterilization of the sputum is absolutely necessary in all cases. (7) Disinfection of the infected localities, and objects used, is likewise necessary. (8) Sanitary regulations, executed by police surveillance, will prevent the dissemination of tuberculosis by means of milk and meat from affected animals. (9) Apparatus for disinfection should be avaliable for all communities. (10) The prophylaxis in families must be controlled by the attending physician.—*Muenchener med. Wochenschrift*, Nov. 26, 1889.

The Antipyretic Treatment.—RIESS opposes the theory, that the elevation of temperature in infectious diseases is a beneficial reaction of the organism against the pathogenic microbes. He says, on the contrary, that the high temperature is positively dangerous, and that its artificial reduction in all cases of long continued pyrexia, is indicated. For this purpose he recommends protracted tepid baths. The patient is placed in a bath at a temperature of 25° R. (about 88° F.), and remains there until the temperature in the rectum is normal. When the temperature again rises, the patient is returned to the bath. If this fails to secure the desired reduction, the usual antipyretics are ordered. He reported over 1,000 cases, of which 809 were cases of typhoid fever. The average duration of the fever in his typhoid cases was 17.9 days. In the discussion following the reading of his paper before the congress of physicians at Heidelburg, NAUNYN agreed with Riess in ascribing no remedial value to high temperature. He believed that the old method, with cold baths of short duration, was equally as good as the protracted tepid baths. The use of antipyretics was not identical with the bath treatment; indeed, the former were, at times, positively injurious. All the other speakers recommended an individualization of treatment. One method should not exclusively be employed; but, according to the nature of the case, either protracted warm baths, temporary cold baths, wet packing, or antipyretics were indicated.—*Deutsche med. Wochenschrift*, November 28, 1889.

MENTAL DISEASES AND MEDICAL JURISPRUDENCE.

By A. W. HOISHOLT, M. D., Assistant Physician, State Asylum for Insane,
Stockton, Cal.

Aprosexia.—This is the name given by DR. GUYE, of Amsterdam, to a cerebral symptom observed in disorders of the nose, and defined as the inability to fix the attention on any definite, more or less abstract subject. It is claimed that it is with aprosexia as with giddiness in aural vertigo. If ear patients are asked whether they suffer from giddiness, an affirmative answer will be given in many cases, perhaps in the majority. Where giddiness is present, on careful examination a relation between it and the ear disease will be found. So a number of cases of nasal obstruction may be treated on account of secondary aural or laryngeal lesions, but aprosexia will not be discovered unless by inquiry. The aurist will be astonished at the number of cases of aprosexia if he inquires for them. It is of more importance still that medical men in general practice be impressed with the frequency of that relation, and that they make it a rule in every case of habitual headache, inability to work, and loss of memory, to inquire after the state of the nose, and to ascertain if the normal nasal respiration be not impeded, and habitually or temporarily superceded by breathing through the mouth. Aprosexia as a symptom of cerebral exhaustion is explained by Guye as due either to the fact that the nutrient matter required for repair in the brain is not sufficiently procured or assimilated, or the products of the "tissue change" which have to be eliminated are incompletely removed. This removal will have to take place partly, at least, by means of the lymph vessels. Now, large lymph vessels leave the cerebral cavity together with the fibres of the olfactory nerve. It is highly probable that structural changes in the nasal mucous membrane, and especially such as will exert pressure on the lymphatics, will impair or prevent the current of the cerebral lymph through the nasal mucous membrane. The retention of the products of the chemical process in the tissues of the brain will lead to results which we may expect to be the same as those of physiological exhaustion—that is, fatigue. Besides structural changes, local hyperemia, often seen as a nasal reflex, will be apt to produce the same pressure on the lymphatics. MR. WILLIAM HILL, of London, in a paper bearing on this subject, refers to the experiments of Ferrier, who observed after extirpation of the prefrontal lobes in monkeys a marked impairment of the faculty of attention and observation. He thinks that aprosexia may be the result of lymphatic and venous stagnation in the anterior region of the cranium, and mentions the fact that idiots—excepting the hydrocephalic—with low, sloping foreheads, indicating a small size of the anterior lobes of the brain, are nearly all mouth-breathers, and victims of some form of nasal or pharyngeal obstruction.—*British Medical Journal*—*American Journal of the Medical Sciences*, December, 1889.

Curability of the General Paralysis of the Insane.—DR. A. VOISIN reports 7 cases, found in French literature, of recovery from progressive paralysis, and adds thereto four observations by himself described at length. These four patients presented pronounced symptoms of general paralysis (in one of these, however, affection of the speech was missing) and regained their health, the symptoms gradually disappearing after the lapse of several years. The first patient has been in perfect health since 1885, and occupies a high public office. The second patient has been well since 1880, and able to superintend his business, in which 300 men are employed. The third patient has completely recovered, notwithstanding a great misfortune in his family and great financial loss. (This patient was exhibited in the clinic as recovered.) The fourth case, a woman, had her health restored in 1878, a slight difference in the size of the pupils, however, remaining. In the two last cases it is not stated whether the "recovered" patients were again able to be actively employed in their business. In conclusion, Voisin urges by no means to omit a therapeutic effort in any case of dementia paralytica, but he does not say definitely that the favorable result in this four cases was due to the mode of treatment, which he mentions and which was formerly much in practice: blisters, the red hot iron, cold baths and douches and ergotine in a dose not exceeding 7½ grs. a day.—*Bulletin Générale de Thérapeutique—Centralblatt f. klin. Med.* December 14, 1889.

The Feeding of the Insane and the Effects of Different Hypnotics.—DR. NUTEL, of the Andernach Insane Asylum, Germany, says that the best method for feeding the insane, who refuse to take food, a subject which also concerns the general practitioner, is with the elastic catheter (Nélaton No. 12) through the nose. By means of the involuntary movements in the act of swallowing, the catheter is quickly carried into the stomach. The regurgitation of the fluids into the funnel, which happens so frequently in using the esophageal sound is prevented by this method. A mixture of ¼:½ milk, two raw eggs and about three ounces of sugar, with or without alcoholic stimulants, proved itself amply sufficient. Pneumonia from food entering the respiratory passages and other bad symptoms were not observed. Among hypnotics very favorable results were obtained from the wet pack applied to the entire body by means of moist cloths of the temperature of the room; the beneficial action being as much through a general sleep-producing and quieting effect as through a direct influence upon the psychosis. Unfavorable after-results are not mentioned. If heart disease, however, is present, care is to be exercised. Bromide of potash is recommended in simple sleeplessness, not, however, when this is due to physical or mental disease. In epilepsy he warns against too large daily doses (ʒ ii), and reports a case of poisoning. Urethan is too uncertain in its effect. Sulphonal (30 to 45 grs.) also proved deficient in regard to certainty of action in insane patients, but, in general, was found useful and was devoid of unpleasant after-effects. Hyoscin hydrochlor. was given internally in the dose of $\frac{1}{120}$ to $\frac{1}{20}$ gr. and subcutaneously up to $\frac{1}{30}$ gr. 1 to 2 times daily. On account of its cheapness, tastelessness and fairly good effect, he recommends it for insane asylums; the remedy cannot, however, be used where there is heart disease. He has not observed the special dangers of this remedy as pointed out by other authors.—*Therap. Monatshefte—Centralblatt f. klin. Med.* December 14, 1889.

Phenomena Pertaining to the Central Nervous System Observed after Resuscitation of Persons Hanged.—J. WAGNER deduces his observations from 19 cases, of which two were his own. Suspension interferes with the cerebral function in two ways: by the asphyxia (accumulation of CO_2) and by compression of the carotids (anemia). When persons suiciding by hanging have been cut down at the right moment and restored to life, it is found that the anemia of the brain is followed temporarily by a considerable cerebral hyperemia, which again leads to other symptoms. The patient is at first unconscious. Before return of consciousness, convulsions generally set in, which may last a short time, but often continue for several hours. Their character is sometimes epileptiform, sometimes tetanic, and the spasms are one-sided as well as bilateral. Rotatory and walking movements have occasionally been observed. As soon as consciousness has returned, a blank in the memory may be ascertained, which generally embraces the act of hanging, and often extends still further back. The degree of amnesia appears to bear a certain relation to the duration of the unconsciousness, and is similar to the defects of memory observed in cerebral concussion and in CO poisoning. Temporary conditions of excitement connected with a certain degree of confusion of ideas are also found. In two cases it resulted in acute dementia of some duration. On the other hand, many already existing mental ailments are improved by the attempt at hanging. Wagner observed two such cases, in one of which there was a recovery, in the other an improvement of the psychosis.—*Jarb. f. Psychiatrie—St. Petersburger medicinische. Woschenschrift*, November 2, 1889. [The convulsions mentioned in this article are no doubt similar in character and cause to those first observed by Kussmaul and Fenner in their experiments on the rabbit. I had occasion to repeat this experiment in Du Bois' laboratory in Berlin, and noticed the epileptiform spasms as well before as after the apnea consequent upon a temporary ligation of the vertebral and carotid arteries on both sides.—A. W. H.]

Psychological Physiology and Hypnotism.—At the Congress which met in Paris last summer for the consideration of these subjects, one of the topics discussed was susceptibility to hypnotic influence. The prevailing opinion seemed to be that persons without any neuropathic defect were hypnotizable, and that nerve deficiency lessened hypnotic susceptibility. All persons could, generally speaking, be brought under the influence of hypnotism, except certain peculiar individuals whom nobody could impress under any circumstances, and the victims of hysteria gravior. Two theories in regard to hypnotism were discussed: "Suggestion" maintained by BERNHEIM, and "fluidism" brought forward by OSCHOROWICZ. The theory of fluidism is, that action is produced upon the organism without cerebral intervention, an idea which has not yet been proved. Bernheim maintained in support of his theory, that the action of physical agents, such as passes, fixing the eyes upon brilliant objects, etc., said not to belong to suggestion, may be explained on the ground of *indirect* suggestion. DALINEWSKY spoke of hypnotism as an assemblage of psycho-physiological phenomena, common to man and animals. To ascertain the laws of its action a careful study of the hypnotic state in animals was essential, their psychic organization being far simpler than man's. He had induced the hypnotic state in various crustaceans, reptiles and birds. The general picture of this state among animals was this: The animal was placed in some abnormal posture, when a slight but prolonged effort on the part of the experimenter overcame its resistance, paralyzing voluntary movements and making the animal quiescent. Marked anesthesia of the skin and mucous surfaces being thus developed, inward excitement, such as that induced by artificial obstruction of the respiratory tract, no longer provoked voluntary movements. Convulsive movements now began, as though indicative of a violent psychical emotion. Repetitions of the hypnotic state make the animals more and more susceptible to the hypnotic influence. Verbal suggestion in man and sense-suggestion in animals were considered homologous, the latter bringing about unconscious and instinctive psychical acts.—*Progrès Médical—New York Medical Journal*, November 30, 1889.

PUBLIC HEALTH.

By W. R. Cluness, M.A., M.D., Sacramento, Cal.

Mortality.—The deaths registered in 94 town districts of the State during the past month, in a population of 769,100, correspond to an annual rate of 14.71 a thousand, the total mortality having been 943. 101 deaths were due to zymotic diseases, giving an annual rate of 1.57 a thousand. Of these 41 were due to typhoid fever, 20 to diphtheria, 17 to cerebro-spinal fever, 13 to diarrhea and dysentery, 7 to cholera infantum, 2 to whooping cough and 1 to scarlet fever. 299 deaths resulted from diseases of the respiratory organs, giving an annual rate of 4.67 a thousand. Of these 171 were due to consumption, 81 to pneumonia, 38 to bronchitis, and 9 to pulmonary congestion; the rate being 2.68 and 1.26 for consumption and pneumonia respectively. 65 deaths resulted from diseases of the heart. The average annual death-rate from all causes, occurring in the ten largest cities and towns in the State, and representing a population of 585,000, was 14.99. The highest rate for the month, occurring in cities having a population of 10,000 or more inhabitants, was reported from San Francisco, the lowest from Chico and vicinity.

Diphtheria.—Dr. E. R. Squibb, of Brooklyn, in the *College and Clinical Record*, gives us an admirable, although brief, abstract of the *materia medica* element of a discussion upon the prevalent treatment of diphtheria which took place recently in that city. Alcohol, he says, was almost universally employed, usually as brandy or whiskey, but with two distinct objects in view; the majority using it as a stimulant and a food to support the failing powers of their patients, and as an adjunct to other treatment; but many used it in large quantities from the beginning as a special powerful antidote to the poison of the disease, very much as it is used in cases of snake-bite. The use of alcohol by the late Dr. E. N. Chapman was alluded to, in whose practice it was usually the principal drug used, and with extraordinary success. The case, also, of a physician who awoke one night with undoubted evidence of the disease in the pharynx. and who partook in brandy of the equivalent of 10 fluid ounces of absolute alcohol in five hours, with no other than the most beneficial effects, yet upon whom, in his normal condition, half an ounce of brandy had an unpleasant effect. When administered in large quantities, any signs of intoxication, or odor of alcohol on the breath were regarded as the limit of dosage, but most of those, thus using it, testified to the rarity of any evidence of intoxication when the disease was well pronounced. Tincture of the chloride of iron was probably more generally used than any other, as the principal agent, and was used both locally and systemically. There was much testimony in its favor and none against it. Corrosive sublimate was used locally by many, and by a few was administered by the stomach. In no case were its toxic effects manifest, although it had occasionally been administered in severe cases to children in 1/8 grain doses for 72 hours consecutively, and until the characteristic green stools were observed. A three year old child took 6/8 of a grain in 6 hours, and 10½ grains in 9 days, with no other than markedly beneficial effects. Attention was called to a paper by Dr. John S. Coleman in the *Journal of the American Medical Association*, for February 23, 1889, in which the above large quantities were administered, and which appears to establish the fact that the disease in question causes a tolerance of this remedy. Peroxide of hydrogen was mentioned as possessing active antiseptic properties, and had been used with much benefit, both locally and systemically. It is stated in conclusion that by the use of these agents the fatality from diphtheria, in the experience of those taking part in the discussion, had been materially reduced below the general mortality, although it was questioned whether this was due to the treatment, or to a milder form of the disease in the communities in which those using it had practised. All, however, had much faith in the treatment.

La Grippe.—Ambitious and sensational journalism having dignified the present epidemic with vastly unnecessary importance, it becomes the duty of medical men everywhere to relieve the public frenzy upon the subject as early and fully as practicable. For the past few days it has prevailed to a considerable extent throughout the Pacific coast, but in so mild a form as scarcely to deserve any attention, excepting from the phenomenal rapidity with which it travels from one country to another, and from the large number of its victims. It appears quite probable that the reports which have reached us from trans-Atlantic countries have been greatly exaggerated, and that there is but little, if any, difference between the characteristics of the disease as they appeared in Russia and upon the Pacific coast, excepting in so far as the severe and changeable weather of the former country induces a greater liability to intercurrent diseases. In Sacramento the disease is usually ushered in without prodromal evidences, by a chill of more or less severity, frontal headache, vertigo, nausea, muscular pains—especially of the back and loins—and a general nervous prostration. In the severer cases the temperature rises to 103° F. within a few hours of the first evidences of the disease, and remains at that point for about six hours, when it gradually subsides, until it reaches 101 - 2° at the end of the first day. At the expiration of 24 hours more, it will usually be found normal, provided quinine be administered liberally. Within the next 24 hours it will not infrequently be found subnormal, to be followed quickly by a slight elevation, about the normal point, and a subsequent recession to the normal under appropriate treatment. In about 80 per cent. of the cases there has been a complete absence of catarrhal symptoms, rendering it probable that when such manifestations are present, they are due to the usual additional element producing them, such as exposure to climatic vicissitudes, sudden arrest of perspiration, etc. The nervous prostration is generally well marked, and in its duration is usually out of proportion to the severity of the attack. So far as the fatality is concerned, it may, without hesitation, be pronounced *nil*, for although a few deaths have been ascribed to it, yet a careful analysis would unquestionably reveal the fact that some intercurrent affection was really the cause of death. The most that can be said of it is, that it predisposes to pulmonary affections; but that in itself it could take the life of any one, is extremely improbable, unless greatly debilitated by old age or former disease. So far as the etiology of the disease is concerned, the only light that has been thrown upon the subject comes from the General Hospital at Vienna, where DRS. JOLLES and MAXIMILLIAN are said to have made the accidental discovery of an unusual and hitherto unobserved bacillus in the urine of a patient, who was supposed to have been afflicted with disease of the kidneys. A similar bacillus having been found in the excretions of all others affected by this disease, the conclusion was very naturally reached that it was characteristic of the influenza, especially as like bacilli could not be found in the excretions or blood of persons free from this affection. It concerns the world but little, however, whether or not the real cause of La Grippe has been discovered, for it appears extremely improbable that so harmless a disease, and one which appears at such long intervals, would be deemed worthy of the time and expenditure necessary to apply any preventive measures by inoculation of the attenuated virus. The phenomenal rapidity with which it spread from one country and state to another, as well as its almost universal prevalence, would render all preventive measures utterly futile. From a scientific point of view alone, does interest hinge upon the discovery.

METEOROLOGY.

By J. W. ROBERTSON, B.A., M. D., San Francisco, Cal.

Summary for December.—*Temperature.*—The temperature has been mild, ranging from 55° on the coast to 45° in the foothills. Frost was reported on a few mornings, but they have been the exception.

Rainfall.—The stormy weather which characterized the last weeks of November continued almost uninterruptedly through the whole month of December. There were few days on which no rain fell, and the precipitation was far above the normal. While it proved a hardship in some localities, because of unfavorable surroundings, it has been an unmixed blessing to the country at large, which needed a more thorough saturation than it had received for some years. In the "glories" of our climate we forget that the rainy day, which may chill the effete visitor, is a god-send to the hardy immigrant, who is to be the backbone of our commonwealth, and to whose successful cultivation of the soil we must look for our ultimate prosperity. The only injury done by the recent storms is to the boom towns who sold weather, not to the honest granger who supplies us with our oranges, fruits and wines.

California—Tabular Statement for December, 1889.

STATIONS.	TEMPERATURE.						RAINFALL.		Mean Relative Humidity	WEATHER.			WIND.	FURNISHED BY—
	Mean	Highest	Lowest	Mean Highest	Mean Lowest	Mean Daily Range	No. of Days Rain Fell	Total Rainfall		No. of Clear Days	No. of Fair Days	No. of Cloudy Days	Prevailing Direction.	
Auburn ....Cal.	47.0	58.0	37.0	----	----	----	----	11.94	----	----	----	----	SE.	Southern Pacific Co.
Berkeley......... "	48 4	60.0	35.8	----	----	8 4	24	12.59	88.7	9	6	16	S.&SE.	Obs. Univ. of Cal.
Colfax........... "	41.6	62.0	30.0	----	----	----	----	21.85	----	----	----	----	SE.	Southern Pacific Co.
Eureka.......... "	46.6	60.0	34.0	52.8	40.4	12.4	23	12.88	81.6	5	6	20	SE.	Signal Service U.S.A.
Fresno.......... "	48.6	65.0	31.0	55.1	43.1	12.0	21	3.87	86.0	2	15	14	E.	" " "
Keeler. .... "	44.7	62.0	23.0	52.2	37.5	14.7	8	0.56	60.1	14	11	6	SE.	" " "
Los Angeles.... "	54.8	68.0	40.0	60.8	48.7	12.1	12	15.80	85.0	8	11	12	NE.	" " "
Monterey .... "	50.9	62.0	32.0	----	----	----	----	11 54	----	----	----	----	S.	Southern Pacific Co.
Napa........... "	44.8	56.0	32.0	49.6	40.0	9.6	26	12.23	----	4	9	18	SW.	Sta. Napa Ins. Asylum
Oakland......... "	49 88	67.0	34.0	59 66	41.66	9.29	21	12.36	91.1	7	14	10	SE.	J. B. Trembley, M.D.
Paso Robles.... "	47.5	62.0	29.0	----	----	----	----	9.13	----	----	----	----	S.	Southern Pacific Co.
Red Bluff....... "	45.2	57.0	31.0	49.9	39.8	10.1	25	9.25	87.2	3	6	22	SE.	Signal Service U.S.A.
Sacramento. ... "	47.7	60.0	33.0	53.5	44.0	9.5	23	7.82	85.6	2	18	11	SE.	" " "
San Diego....... "	57.5	69.0	40.0	62.5	52.3	10.2	19	7.71	82.8	9	6	16	S.	" " "
San Francisco.. "	51.3	63.0	40.0	55.6	47.0	8.6	24	13.81	83.6	2	13	16	SE.	" " "
Santa Barbara.. "	54.0	60.0	40.0	60.8	50.0	12.8	16	10.33	78.0	10	7	14	SE.	Hugh D. Vail.
Santa Cruz...... "	55.0	70.0	36.0	----	----	----	----	20.38	----	----	----	----	S.	Southern Pacific Co.
Yuma...........A. T.	56.8	73.0	38 0	66.6	49.9	16.7	9	2.43	78.7	9	12	10	W.	Signal Service U.S.A.

Blank (----) indicates data missing.

Occidental Medical Times.

JAMES H. PARKINSON, L. R. C. S. I., EDITOR.

COMMUNICATIONS are invited from all parts of the world. When necessary to elucidate the text, illustrations will be furnished without cost to the author.

SACRAMENTO: FEBRUARY, 1890.

THE STATE SOCIETY.

The meeting of the State Society, to be held in Los Angeles, commences on Tuesday, April 15, 1890. The change from the third Wednesday to the third Tuesday was made when the new constitution was adopted, and should be borne in mind. This will be the first meeting of the Society held in Southern California, and should be signalized by a large attendance from the central and northern portions of the State. Members from these sections have for many years consulted their own convenience, and the meetings have been held in a very limited radius. We do not believe that this is sound policy, as it fails to provide a so thoroughly representative membership as an occasional change of locality will ensure. Every one should make a determined effort to attend; and the trip, with its necessary relaxation from daily toil, will certainly be beneficial. We hope soon to announce a substantial reduction in rates, such as will render it possible for all to be present. A movement is on foot to provide a special excursion train from San Francisco, with which connection can be made at Lathrop, from Sacramento and points to the North and East. If this feature be ensured, it will certainly be liberally patronized, and will add much to the pleasure of the journey.

The Committee of Arrangements, and the southern county societies are working earnestly, committees have been appointed, and preparations are being made on all sides. The President, DR. WALTER LINDLEY, says that the outlook is most encouraging, but that no effort will be spared to make this as successful as any meeting that has been held. Some good work will now be required on the part of the chairmen of the various committees, as on their efforts the scientific value of the meeting mainly depends.

It is a great, and unfortunately frequent, mistake to put off the writing of a report, or paper, till the last moment, and then to impose upon the Society the work of a few hurried hours. Good work cannot be accomplished in this manner, but only at the expense of considerable time and labor. Papers should be completed several weeks in advance, and the interval consumed in additions or revision. They should be as brief as the scope of the subject will possibly permit, so as to ensure attention and allow of discussion. Those who are not members of committees, but who intend to read papers, should announce their intention at an early date, forwarding the title of the paper, and the time required to read it, so that provision may be made in the official programme.

The Society has been promised a large accession to its membership. About sixty was suggested, but we should like to see at least one hundred new members, and we believe that systematic work can accomplish this result. Organization is an essential preliminary, as under the new rule "membership in the local society" is absolutely necessary to obtain and to retain membership in the State Society. In this respect, the list of members published in the last volume of Transactions, requires some correction, the matter having been overlooked by the Committee on Publication.

NOTES.

The Medical Analectic and Epitome.

Commencing with January, 1890, *The Epitome* was incorporated with *The Medical Analectic*, under the editorial management of Dr. R. W. Amidon and his collaborators. The subscription price has been reduced to $2, and the combined journal will be published as a monthly, on the 25th of each month.

Statistics of Leprosy in the United States.

We have been requested to publish the following note: "In view of the general impression that leprosy is spreading in this country, it is desirable, in the interest of the public health, to obtain accurate information upon this point. The undersigned is engaged in collecting statistics of all cases of leprosy in the United States, and he would ask members of the profession to aid in this work by sending a report of any case or cases under their observation, or coming within their knowledge. Please give location, age, sex, and nationality of the patient, and the form of the disease—tubercular or anesthetic; also any facts bearing upon the question of contagion and heredity. Address Dr. Prince A. Morrow, 66 West 40th street, New York."

The Standardizing of Fluid Preparations.

The revision of the Pharmacopeia certainly demands numerous additions and eliminations. A change that would be of undoubted benefit, is the accurate definition of the strengths of fluid extracts. According to the Pharmacopeia, one cubic centimetre of a fluid extract represents one gramme of the drug employed in its manufacture. This is open to the obvious defect that the quantity of the crude drug included, may be of varying quality as regards medicinal effect. To meet this grave source of error and dissatisfaction, Parke, Davis & Co., several years ago, began to manufacture fluid extracts, which they termed "normal liquids," the standard being one cubic centimetre, representing one gramme of drug of *standard strength*. This virtually provided an extract of a positive strength, and the adoption of some such standard in the new Pharmacopeia is very desirable. We believe that the production of solid extracts is susceptible of a similar improvement, so that the physician will know that in prescribing a given quantity of a drug, the dose of the active principle will really be administered.

Liabilities for Injurious Patent Medicines.

The *Boston Medical and Surgical Journal* says: The Supreme Court of Georgia has lately rendered a decision that the proprietor of a patent medicine is liable in damages for injury done to any person who takes the medicine according to the directions. This liability does not fall upon the druggist who sells the medicine, but it attaches to the proprietor even when the consumer buys from the former. The Court says:

> "These proprietary or patent medicines are secret, or intended by the proprietors to be secret, as to their contents. They expect to derive a profit from such secrecy. They are therefore liable for all injuries sustained by any one who takes their medicine in such quantities as may be prescribed by them. There is no way for a person who uses the medicine to ascertain what its effects are ordinarily, and in this case the contents were only ascertained after an analysis made by a chemist, which would be very inconvenient and expensive to the public. Nor would it be the duty of a person using the medicine to ascertain what poisonous drugs it may contain. He has a right to rely upon the statement of the pro-

prietor, printed and published to the world; and if thus relying he takes the medicine and is injured on account of some concealed drug of which he is unaware, the proprietor is not free from fault, and is liable for the injury thereby sustained.''

This decision is a very important one, and if sustained, may go a long way towards abating the patent medicine evil. A few more suits of a similar character would compel the nostrum vendors to publish the formula in accordance with the terms of the bill recently defeated in the New York Legislature. This formula must necessarily be a true one, else the proprietor would be equally liable as if one had not been published.

Lister's Latest Antiseptic Dressing.

At a recent meeting of the Medical Society of London (*vide* p. 78), SIR JOSEPH LISTER brought forward a new antiseptic: ''a double cyanide of mercury and zinc.'' He had always been impressed by the grave defects to which the solubility of bichloride exposed an antiseptic dressing, for when the secretions of a wound were profuse, the salt was washed from the deeper layers of the dressing, and even out of it altogether. After a prolonged series of experiments, he found that a double cyanide of mercury and zinc seemed to fulfill every indication. Since then he has made some further improvements, of which our London correspondent sends us the following report as delivered before the Harverian Society: I have long felt it would be exceedingly desirable if this material could in some way be colored, because, being perfectly colorless, we have to trust entirely to our manufacturer to know when there is and when there is not the antiseptic element in the gauze, whether it is in due proportion or is not. It would be exceedingly desirable if it could be colored so that we might see by the tint where the antiseptic substance was, and whether it was in proper proportion, uniformly distributed, or otherwise. I made attempts to stain this material. I found that some of the aniline dyes are precipitated by it and some are not. For instance, magenta is not precipitated in the least, but methel aniline violet and gentian violet, which seems to be a mere variety of the same thing, are precipitated, and an exceedingly small amount of dye is sufficient to give adequate color to the double cyanide. I proceeded to charge a piece of gauze with some of this dyed cyanide, to see how it would tint it, and when it was dry I was very much surprised to find that the gauze charged with tinted cyanide did not at all dust, as a gauze would have done which had received the untinted cyanide, so much so that it was on a par, if not superior, to the gauze charged by means of starch. Of course, if this was so, it would be very satisfactory; we should greatly simplify the method of manufacture, and also, by getting rid of the starch, we should make our gauze softer, more pliable, and comfortable to the patient. It is astonishing that the dye should have this power. The quantity used, of the gentian violet, is exceedingly small: 1 part to 50,000. The sublimate solution in which we diffuse the salt is 1 to 4,000. We take, say, 20 grains of the salt, 15 ounces of the dilute solution of corrosive sublimate, diffuse the salt in the water, draw a piece of the fabric through it, and so charge it with the requisite amount of cyanide. Now to this liquid, 1 to 4,000 of the corrosive sublimate solution, all we have to add is 1-50,000th part of the aniline dye of the gentian violet. Thus we have the two advantages combined, while we have the material dyed so as to show its presence by its tint; it also prevents dusting. It does not prevent the dusting altogether; when you first manipulate a piece of dry gauze a certain amount of dust comes out. Manipulation has only got rid of some of the grosser particles, as we might expect if the dye acts in the way I have described. The little dusting that there is will cause no inconvenience whatever to the surgeon, if he uses the gauze, as I have strongly recommended him to do, in the moist state; moistened with a 1 to 4,000 solution of corrosive sublimate there will then, of course, be no dusting.

Leprosy: Its Contagiousness and Its Treatment.

The subject of leprosy is now attracting very general professional attention, and as we believe that it is of more than ordinary interest to California, anything bearing upon the question is worthy of attention, DR. G. AMAUER HANSEN, of Bergen, whose name is so intimately associated with this disease, has recently written to DR. EMERSON, President of the Hawaiian Board of Health, in reply to certain questions. He says, as to the curability of leprosy, that he can form no opinion of the influence of climate, never having seen the disease in the tropics. Some patients have left the Norweigian hospitals cured, but he does not pretend that they are cured by treatment. "I am more inclined to think that leprosy is cured—principally, at any rate—in its natural course, without the interference of any treatment, if the patients only live long enough. All the leprous eruption, the tubercles as well as the patches, disappear in due time, but generally the tubercular patients die before that time. I have, however, seen tubercular cases in which all tubercles had disappeared; there only remained anesthesia, as in the other form of the disease. The patient in whom there is only left anesthesia, without any skin eruption, I, for my part, consider as cured of leprosy, the anesthesia is only the bad consequence of the disease. Sometimes it happens that the skin eruption, when it consists only of patches, morphea, disappears without leaving any anesthesia; but that is very seldom, for generally the nerves are attacked very early, and it is rarely that the nerve affection is cured without leaving anesthesia." He refers to Unna's reported cures, but does not offer an opinion, as he has never seen any of the patients. He mentions that Dr. Danielsen has tried Unna's method, but as far as experiments have gone, "the results are not better than by other treatment." He says: "It is safest to consider the disease as incurable" and to make every effort for its prevention. "In this respect much can be done, the disease being contagious—but probably very little so; cleanliness alone, is, in my opinion, enough to prevent it." He considers the spread of the disease in Norway to be due to want of cleanliness and want of fear of contagion, conditions very similar to those obtaining in Hawaii. His figures regarding the result of segregation and isolation, are both interesting and encouraging. There are three asylums for lepers in Norway, into which, since 1856, have been gathered 4,000 lepers. "The consequence of this is, that while in 1856 we had about 3,000 lepers in Norway, we now have hardly 1,000 * * * there can be no doubt that isolation is the chief cause of the diminution of the disease." He has steadily written and spoken of the disease as contagious, and most people now consider it so, and they have, therefore, become more cautious in their intercourse with lepers. The peasants have also made much progress in cleanliness. He hopes "that the disease in some forty or fifty years shall have disappeared totally, or nearly so, from Norway." Dr. Hansen believes that "isolation is the only means of extinguishing the disease"—and this is really the keynote to the whole question. It is, unfortunately, difficult to enforce, particularly until a community becomes thoroughly alarmed for its safety. It is to be regretted that any authorities, by persisting in the non-contagious character of the disease, should strengthen the hands of those who may be interested in supporting this view.

Dr. Hansen writes with practical truth, when he says that it is safest to consider the disease as incurable, and to depend on isolation. This does not prevent treatment, but rather facilitates it by providing material for those of special experience to investigate. It does, however, effectually prevent the spread of the disease. There can be no question that leprosy is increasing in the United States, and that this is due to the absence of segregation, and of a proper conception of the incurable and contagious nature of the disease. The number of cases is comparatively insignificant, but each case is a source of danger, that, as such, should not be permitted to exist. The subject is of special interest to the Pacific coast, where the presence of a large Chinese population insures the occurrence of sporadic cases from time to time.

SOCIETY PROCEEDINGS.

SACRAMENTO SOCIETY FOR MEDICAL IMPROVEMENT.

Regular Meeting, December 17, 1889.

The President, A. E. BRUNE, M.D., in the Chair.

DR. C. E. FOWLER read a paper on "The Inhalation of Foreign Substances as a Cause of Pulmonary Disease."

DR. G. L. SIMMONS said some of the facts mentioned in the paper were new to him. He had not been aware that the combustion of giant powder was a cause of pulmonary irritation. When living in London he had noticed in the winter time that people quite generally suffered from cough, the sputa being of a very dark color, due, no doubt, to inhalation of particles of carbon which, at that season, hangs over the city as a dense fog. This, however, did not seem to produce any injurious effects. Watson, in his work on Medicine, mentions knife-grinders' asthma, due to the inhalation of emery dust, ultimately causing the lung to become a calcareous mass. The average life of men employed in that trade was stated to be five years.

DR. W. R. CLUNESS said it was not probable that these foreign substances could cause phthisis, though they could hasten the disease where it existed. He had recently seen some patients from the mining districts of Amador county. All of them had coughs and were expectorating a dark frothy mucus.

DR. F. B. SUTLIFF understood that experiments had proved that the dust on the walls and ceilings of wards containing tuberculous patients contained bacilli in large numbers. While the sputum was wet it could not do much harm, but when it became dry and mingled with the atmosphere, it was impossible to guard against infection; the remedy, therefore, lay in the destruction of the sputa.

DR. G. L. SIMMONS, JR., said that the period of incubation of the bacillus tuberculosis was short—about ten days. The inhalation of foreign substances no doubt induced consumption by preventing the escape of the germ which had become lodged in the lung.

DR. W. E. BRIGGS believed that a great many diseases were brought about by inhaling foreign substances. In the pursuit of unhealthy occupations, respirators should be constantly worn, great attention being paid to efficient ventilation and the prevention or removal of dust. The presence of smoke and particles of carbon in the atmosphere could be avoided by the proper construction of grates and the use of appliances insuring the perfect combustion of the fuel. In time, no doubt, these would be generally adopted.

Dr. J. R. Laine had seen lungs that, when cut into, presented dark, gritty masses, three quarters of an inch in diameter. These were probably due to inhaling particles of carbon. Consumption can certainly be contracted by contact, but he doubted that it was a highly contagious disease.

Dr. J. H. Parkinson said that it was recognized that the inhalation of foreign substances could set up a condition of chronic pulmonary disease, independent of tuberculosis. Tuberculosis might accompany this when infection had taken place, and the former condition certainly predisposed to it. Pulmonary tuberculosis was undoubtedly infectious, but he thought that this infectiousness had been greatly overrated, and that, when dealing with the public, exaggerations should be avoided. Regarding heredity, he was satisfied that though actual disease might not be transmitted, a very marked predisposition was often inherited.

Dr. W. A. Briggs said: One in every seven die from phthisis, the world over. It is certainly a contagious disease, and yet we hesitate in declaring it so. The people should be made aware of its infectious nature. He did not think that heredity was half so important a factor as direct transmission, and he believed that the prevalence of phthisis in families was generally due to infection. He had certainly seen instances that strongly supported this view.

Dr. Fowler, in replying, said that he did not mean to convey that the inhalation of foreign substances caused consumption, but that by setting up an unhealthy condition of the tissues, it predisposed to it.

SPECIAL CORRESPONDENCE.

GERMANY.

[FROM OUR OWN CORRESPONDENT.]

Death of Richard von Volkmann.—A Visit to Halle.—The New Hospital at Goettingen.—Dr. Fraenkel and the New Chair of Hygiene at Königsberg.—Treatment of Tuberculous Disease of Joints and Bones.—Influenza at Berlin.

The science of surgery in Germany, in fact, throughout the whole world, has sustained a severe loss by the death of Professor Richard von Volkmann, which occurred at Jena on the 28th of November, 1889. It is superfluous to mention the innumerable directions in which Science owes a distinct advance to this eminent and much-lamented surgeon. Professor Volkmann's clinic at Halle was a point of attraction for all medical men traveling in Germany, and, especially in the summer months, his clinical lectures were often attended by almost as many physicians as students.

I well remember a short visit paid to Halle a few years ago, for the purpose of seeing and hearing him. The town itself is rather untidy, for the most part, unsightly, and, taken all in all, not exactly an attractive place. Were it not for the university, that has been located there so long, it would probably, by now, have sunk into complete insignificance; but in pursuance of the system which the lawgivers of former times adopted, of placing the sites of study in places of more or less retreat, thinking that Science is best fostered by quietude, Halle received the boon of a university, which has had the effect of retaining to her an undeniable importance. In years gone by, the theological faculty was the most famous, but of late Volkmann's name was (if I may be permitted to use the expression) the great attraction. Among German surgeons he was one of the very first to adopt and improve upon the teachings of Lister, regarding antisepsis, and so certain was he of the accuracy of his disinfection, that he is said to have declared himself able to sterilize any object, no matter how full of infective matter, to such a degree as to be able to insert it within a joint and make it heal up in it without suppuration. When reading the reports of work done under his guidance, one receives the impression that an aseptic result with him should be considered as almost a mathematical certainty, and a visit to the bright and well-arranged wards themselves, seems at once to furnish the explanation of this fact. The buildings, both the central block, with the administrative department, operating theater and auditorium, the private dwellings and assistants' rooms, as well as the pavilions, which contain the wards for the patients, are of quite recent date, and present a cheerful and healthy appearance. Volkmann impressed me as a man whose mind was continually on the stretch with intense mental work, so much so as to be almost constantly in a kind of nervous excitement. His delivery was rapid, even hasty, and his method of operating very quick; quite a contrast to the calm deliberateness of Thiersch, from whose clinic I had then just come. I saw Volkmann remove a breast almost by a few strokes of the knife, and he discoursed all the time, enumerating the various steps of the operation for the instruction of his hearers in the same rapid manner. Of course, this operation could only afford an opportunity of judging *ex ungue leonem*. At a comparatively small hospital, like Halle, the supply of patients is not always copious, nevertheless I received a deep impression, and I cannot but avail myself of this opportunity to add my mite of tribute to the memory of one so justly famous and so universally regretted.

Of other recent incidents of note, one marking a very satisfactory advance, is the opening of the new surgical clinic at Goettingen, a short time since. Goettingen is also one of those dull, dreary, little German towns, which are occasionally mentioned as playing a more or less important role in history, either recent or more remote, and which when you come to visit them, you are surprised to find of a very unprepossessing exterior and insignificant size. Since the annexation by Prussia, after the overthrow of the Hanoverian dynasty, however, Goettingen is improving in external appearance, a new railway station, a new theatre, and last, but not least important, a new hospital having been erected. The old one was a highly insanitary building, built on insufficiently drained grounds, in an old fashioned, imperfect manner, and presenting, even to the unconcerned passers-by, a disagreeable, gloomy appearance. Thanks, however, to the energy and zeal of his Excellency von Gossler, a handsome, and in every way desirable, hospital is now erected on the outskirts of the town. As yet, only the surgical department, containing one hundred beds under the care of Professor Koenig, is ready for the reception of patients, but the other wards will be completed in a short time. The arrangements are as perfect as possible, every care being taken to enable antiseptic precautions to be carried out to the utmost degree, so it is to be expected that Koenig's genius will now achieve even greater triumphs than those which have already made his name so famous. Although somewhat advanced in years, he is still in robust health, a strongly-built, powerful man, slightly inclined to obesity, for which reason riding on horseback is one of his favorite recreations. Volkmann and he were great friends. Koenig's merits were honored and acknowledged at the opening of the clinique, by the bestowal upon him of the Order of the Crown, at present one of the most valued decorations. Probably this distinguished honor was due to the advocacy of the Cabinet Minister, von

Gossler himself; who, as I have already mentioned, takes a most lively interest in all matters concerning the medical world.

The erection of a chair of hygiene at Königsberg is also chiefly his work. Privat docens, Dr. Carl Fraenkel, first assistant of Robert Koch, in Berlin, has been selected to fill this post. Dr. Fraenkel is a very young man, not yet thirty years of age, but he has already distinguished himself by a textbook of bacteriology (Grundriss der Bacterienkunde), which he published a few years ago, and of which a second edition long ago, became necessary, and, also by a microphosographical atlas of bacteriology, which he is now publishing conjointly with Dr. Pfeiffer. The first four parts which have appeared give promise of a very complete and instructive work. Besides these, he has published a number of papers on investigations on various bacteriological questions. All this has been achieved in the course of little more than four years, for up to that time, he had not commenced the study of bacteriology. At the university, to my personal knowledge, he attracted the attention both of the professors and the students; the former, by his quickness of perception and retentive memory, and the latter, by his escapades of various kinds, his self-assertion and his faculty of speech. It is certain that, although still so young, he will prove a distinguished ornament of the university that has entrusted him with the task of founding a department for hygiene among its distinguished savants. Of the professors of Leipzic, where he passed the greater part of his student's life, Professor Wagner, the eminent clinician is dead. Cohnheim, whose great favorite Fraenkel always was, died five years ago. Weigert, (celebrated for his methods of staining nerve tissue, his theory of the necrosis of coagulation, etc.) has gone to Frankfort. Strümpell is professor in Erlangen; Vierorete, professor in Jena, Gaule in Zürich; Credé and others of less importance have also retired from the field; but those who remain will never forget Fraenkel's lively ways, his ready volubility and his pleasantly conceited self-satisfaction, with his carefully chosen attire, which was always in the height of fashion.

Leipzic has again brought forward something useful in Dr. Landerer's method of injecting an emulsion of balsam of Peru into tuberculous joints and tissues. This clinique has always contained a great number of patients afflicted with this disease, so it seems but natural that the remedy for it should be most eagerly sought there. Landerer first published some observations on this method in the *Muenchener medicin. Wochenschrift*, about a year ago, and has now reported a further series of cases so treated, the results being, on the whole, very favorable. The great drawback to the method is the difficulty often experienced in obtaining pure Peruvian balm. Professor Binz describes the manner in which it is obtained for us in Germany as follows: "It is collected in South or Central America, in the few districts where it is found, packed carefully in a special kind of package, and shipped for London. Here it is taken out of the coverings, adulterated more or less extensively with turpentine and other baser bodies, and then returned to the original packings, to be forwarded to the continent." I hope this terse description of the procedure does not hold good in the majority of cases, but it is well to be on one's guard. The method adopted by Professor Trendelenburg, at Bonn, for the treatment of tuberculous joints by the injection of iodoform suspended in oil, is superior, as the quality of the preparation used is not open to question. When reading the report of cases thus treated, it is difficult to decide which of the two methods is to be preferred. At any rate, it is a great satisfaction to see a number of cases healed without the extensive and often dreadfully mutilating removal of important parts, which hitherto constituted almost the only reliable method of combating this insidious malady.

Another disease has now been brought under the observation of German physicians, in the shape of an epidemic of influenza, which for generations has not been so widely distributed. It would seem as if this ailment, which, a few weeks ago, was reported to be raging in St. Petersburg, had travelled west, and would overrun the whole continent. In Berlin the number attacked is so great, that in all departments of business unwelcome stoppages occur; and the trouble is, by no means, confined to the poorer classes, but the well-to-do are equally afflicted. Even Professor Virchow is said to be a sufferer; at any rate, he was unable to be present at the meeting of his political party, the "Deutschfreisinige," also known by the name of the "Progressists." I may here remark that any mishap occurring to this party is not likely to be productive of serious disadvantage to the Empire in general, for, in spite of its name, the party is more a drag than an incentive power in the public machinery, and Virchow's eminence in medical science is far superior to his importance in politics. But for the sake of medical science, naturally, it is very much indeed to be regretted, that one of the foremost savants of Germany should be a sufferer, and we will wish him a speedy and most complete recovery. As to the disease in general, in this epidemic it appears to be more unpleasant than dangerous, and the Berlin doctors may be congratulated on this excellent opportunity of adding to their personal experience.

January 5, 1890.

CORRESPONDENCE.

Whither we are Drifting.

Dear Sir:—From a number of journals and circulars on my table, aided by a proprietary prophetic ken, I venture to evolve the formula of the not distant future:

℞	—Sulphonal—Bayer	℈iv
	Bromides—Hancock	ʒiv
	Liq. Tong. Sal—Mo.	
	Succus—McDade	aa ℥i
	Caulocorea—Me.	℥iss
	Syrupi—McArthur	℥ii
	Aquæ—Spring Valley	℥iii—M

Fiat mistura—(Leverett's.)

Signetur—Take a teaspoonful (Rogers) well diluted, three times (Waltham) a day.

San Diego, Cal. C. M. FENN, M. D.

REVIEWS AND NOTICES.

A TEXT-BOOK OF ANIMAL PHYSIOLOGY, WITH INTRODUCTORY CHAPTERS IN GENERAL BIOLOGY, AND A FULL TREATMENT OF REPRODUCTION. For Students of Human and Comparative (Veterinary) Medicine, and of General Biology. By Wesley Mills, M. A., M. D., L. R. C. P. (England), Professor of Physiology in McGill University and the Veterinary College, Montreal. With over 500 illustrations. New York: D. Appleton & Co. pp. xii—700.

Too often physiology is to the medical practician a dark continent; or, perhaps, rather, a submerged one—an Atlantis, whose reminescence is as shadowy and indistinct as the vestiges of a previous existence. Engrossed by pathology and therapeutics, he too rarely finds time or takes it to refresh and replenish his knowledge of the various healthy functions, and their normal co-relations, of physiology. Anatomy, physiology and hygiene, the normal structure, the normal functions, and the normal conditions of living organisms, are the groundwork of medicine, and one's practice is rarely broader than one's knowledge of these fundamental sciences. The progressive physician, therefore, keeps fully abreast of the results of physiological research—always to the profit of his patient, and not rarely to the discomfiture of the druggist. Of recent works on physiology, the one under consideration is certainly among the best, and in some respects it is unique. Extremely valuable features are the summary at the end of each chapter, the special considerations dealing with development, relations to pathology, etc., and the distinct presentation of the theory of evolution in its physiological bearings. The book is of moderate size, freely illustrated, and of excellent make-up. It will be welcomed by all students of physiology—which should include every physician.

THE EVIL THAT HAS BEEN SAID OF DOCTORS. Extracts from Early Writers, collated from "Le Mal qu' on a Dit des Medecins" of Dr. S. J. Witkowski. Translated, with Annotations, by T. C. Minor, M.D. Cincinnati: Reprinted from the *Lancet-Clinic*.

This interesting little work is a reprint of a series of articles that have appeared in the Cincinnati *Lancet-Clinic*, and will well repay perusal. Anecdotes, epigrams, and satires, culled from ancient and modern writers, illustrate the spirit that has pervaded mankind through all ages, when not in need of the services of the profession. Looking over them we recognize many a sentiment that, clothed in modern language, is of daily familiarity. Much of this severity was deserved, and is still merited in certain quarters. However, the progress of scientific medicine is gradually and surely eliminating empiricism, dogma, and 'pathy; and though man will still be mortal, sanitary science has added several years to his life, and eliminated many preventable factors of mortality.

ANNUAL REPORT OF THE HEALTH DEPARTMENT OF THE CITY AND COUNTY OF SAN FRANCISCO, FOR THE FISCAL YEAR ENDING JUNE 30, 1889.

The total mortality for the year, in an estimated population of 330,000, was 5,729, as against 6,036 for the previous year, giving a rate of 17.36. The total number of deaths from zymotic diseases was 637, a decrease of 251 from the previous year; the number from diphtheria and typhoid fever being 105 and 138, respectively. The sewerage system of the Mission, and the locality south of it, which was vigorously condemned in the last report of this department, is now stated to be greatly improved. The need of a proper ambulance system is referred to. The City Physician states that "the county jail is in a very good hygienic condition, considering its crowded state." This is rather anomalous, as we had believed that the state of that institution rendered a "hygienic condition" impossible. The need of separate accommodations for female patients at the Receiving Hospital is referred to, and the lack of instruments and surgical appliances is also mentioned. The total number of cases treated at the Receiving Hospital was 4,394. Under the head of poisons, we find that morphine is the favorite agent, there being 45 cases with 8 deaths; opium coming next, with 17 cases and 1 death. There were 5 cases of poisoning from cocaine. The Superintendent of the Alms House says that the number of persons seeking shelter there is steadily increasing year by year. This he ascribes to the fact that "the City and County Hospital transfers all its incurable convalescents to that institution. Most of these people are paralytics, cripples, or consumptives, who come to remain." This is as it should be; a hospital is only intended for acute cases, or for those of long standing, likely to be benefited by treatment. With the exception of such as may be retained for clinical instruction, it is much better to move the incurables and chronics to the alms house, where they can be attended and cared for with equal comfort and greater economy.

APPLETON'S MEDICAL LIBRARY.

Messrs. D. Appleton & Co. have issued a Medical Library of ten octavo volumes, uniformly bound in half morocco, and comprising the following works: Practice of Medicine, Bartholow; Materia Medica and Therapeutics, Bartholow; Operative Surgery, Bryant; The Rules of Aseptic and Antiseptic Surgery, Gerster; Diseases of the Nervous System, Hammond; Genito-Urinary Diseases, including Syphilis, Keyes; The Science and Art of Midwifery, Lusk; Diseases of the Skin, Shoemaker; Diseases of Women, Skene; Diseases of Children, Vogel. We have already reviewed the majority of these works and it is, therefore, superfluous to do more than mention that the aggregate price of the Library, $50.00, is much less than the combined retail price of the volumes. Those physicians possessing some of the foregoing books will be permitted to make a selection of not less than five volumes, for $27.50. The publishers have arranged for very liberal terms of payment. Inquiries and orders should be addressed to Mr. Ernest Hardt, 300 Post street, San Francisco.

THE TRAINED NURSE. Holiday number. Buffalo: Lakeside Publishing Co.

This publication do doubt fills a useful sphere, and from the character of the number before us, is worthy of the support of the nursing sisterhood. We notice the "proposed By-laws of the New York State Trained Nurses' Association," which it is hoped to make the foundation for a National organization. If properly carried out, this will certainly be productive of much good. The line ought to be strictly drawn on qualifications, which, without exception, should be preliminary training, and the possession of a diploma as evidence of such. Modern medicine, and particularly modern surgery, demand skilled assistants as essential to the success of treatment, and the hap-hazard, ignorant and slip-shod methods of former times must be replaced by knowledge and precision. Working in intimate relation with the medical profession, we believe that such an organization will prove a mutual advantage.

ON THE SURGERY OF THE KNEE-JOINT, by C. B. Keetley, F. R. C. S. AIDS TO OPHTHALMIC MEDICINE AND SURGERY, by Jonathan Hutchinson, Jr. BACTERIOLOGICAL TECHNOLOGY FOR PHYSICIANS, by Dr. C. J. Salomonsen. Wood's Medical and Surgical Monographs, Vol. IV, No. 2. New York: Wm. Wood & Co. Price $1.

Dr. Keetley's article on the Surgery of the Knee-joint, although confessedly brief, covers much ground and contains many invaluable suggestions. The main points insisted upon, not only in the class of cases under special consideration, but as well in general surgery, are: (1) The necessity for early diagnosis. (2) An abiding faith in aseptic and antiseptic methods. (3) Early, bold and radical measures for relief. The article throughout is consistent with the author's former teachings. Little more and nothing less could be expected from one whose work has been in fullest accord with the spirit of his age. Mr. Hutchinson has compressed, within less than one hundred pages, a very useful and safe guide to the general practitioner. If he is sure of his diagnosis, and follows the simple and plain directions for treatment advised by the author, he cannot go wrong. Mr. Hutchinson believes in the efficacy of the antiseptic treatment of disease as well as of wounds, and in all respects his advice is abreast of the times. The publishers are to be congratulated on being able to find such plain and simple language in the work of a specialist. Dr. Salomonsen's article is thoroughly practical, and is profusely illustrated.

PAMPHLET NOTICES.

MALTINE AND THE COMBINATIONS OF MALTINE WITH COD LIVER OIL.
The Maltine Manufacturing Co's Portrait Gallery for this month comprises Sir Morell McKenzie, and Dr. Shrader, of Berlin.

PARKE, DAVIS & CO'S CALENDAR FOR 1890.
This well known firm has brought out a calendar for 1890 embodying a most original and thoroughly artistic design. The scene represents two scantily clad imps indulging in the Japanese sport of lobster fighting, by the light of the moon on the ocean's shore. We note, with regret for our readers, that the "entire edition has been sent out."

BOOKS AND PAMPHLETS RECEIVED.

Personal Observations of Leprosy in Mexico and the Sandwich Islands. By Prince A. Morrow, M. D. [Reprinted form the *New York Medical Journal.*]

Case of Tuberculosis Papillomatosa Cutis. By Prince A. Morrow, M. D. [Reprinted from the *Journal of Cutaneons and Genito-Urinary Diseases.*]

Essay on Medical Pneumatology; a Physiological, Clinical and Therapeutic investigation of the gases. By J. N. Demarquay, Surgeon to the Municipal Hospital, Paris, etc. Translated, with notes, additions and omissions, by Samuel S. Wallian, M. A., M. D., pp. xvi—300. Philadelphia: F. A. Davis; cloth, $2; Rus., $3.

Education and Culture as Related to the Health and Diseases of Women. By Alex. J. C. Skene, M. D.; Physician's Leisure Library. Detroit: George S. Davis; paper, 25 cents; cloth, 50 cents.

Diabetes Mellitus and Insipidus. By Andrew H. Smith, M. D., Professor of Clinical Medicine and Therapeutics at the New York Post Graduate Medical School; Physician to the Presbyterian Hospital, etc. Physician's Leisure Library. Detroit: George S. Davis; paper, 25 cents; cloth, 50 cents.

The Cure of Crooked and otherwise Deformed Noses By John B. Roberts, M.A., M.D.

Report of the Chief of the Bureau of Medicine and Surgery to the Secretary of the Navy, 1889.

A Handbook of Dermatology, for the use of students. By A. H. Ohmann-Dumesnil, M. A., M. D., Professor of Dermatology, St. Louis College of Physicians and Surgeons; Consulting Dermatologist of the St. Louis City Hospital, etc. St. Louis: St. Louis Medical and Surgical Journal Publishing Co.; pp. viii—167.

MEDICAL NEWS.

LICENTIATES OF THE BOARD OF EXAMINERS.

At the regular meeting of the Board of Examiners, held Jan. 2, 1890, the following physicians were granted certificates to practise medicine and surgery in this State:

Dorcas L. L. Ballard, San Francisco; Cooper Med. Coll., Cal., Nov. 12,'89.
Robert Elmer Bunker, San Francisco; Med. Dept. Univ. of Cal., Nov. 14,'89.
A. Judson Collar, Yreka; Mich. Coll. of Med., Detroit, Mich., Mch. 3,'84.
Harry Nelson Cross, Stockton; Cooper Med. Coll., Cal., Nov. 12,'89.
Francesca I. Foreman, San Francisco; Med. Dept. Univ. of Cal., Nov. 14,'89.
Fred. A. Grazer, San Francisco; Cooper Med. Coll., Cal., Nov. 12,'89.
Benj. A. Guyton, San Jose; Coll. Phys. and Surgs., Baltimore, Md., Mch. 14,'79.
Roland English Hartley, Sacramento; Cooper Med. Coll., Cal., Nov. 12,'89.
Daniel Morris Harvey, San Francisco; Cooper Med. Coll., Cal., Nov. 12,'89.
Wm. Henry Haskin, San Francisco; Med. Dept. Univ. of Cal., Nov. 14,'89.
Cordelia B. Leggett, Oroville; Cooper Med. Coll. Cal., Nov. 12,'89.
James L. McCollum, Oakland; Chicago Med. Coll., Ill., Mch. 26,'89,
Jas. A. Oliver, San Francisco; Med. Dept. Univ. of Cal., Nov. 14,'89.
Geo. S. Shattuck, Oakland; Mich. Coll. of Med., Detroit, Mich., Mch. 3,'81.
Walter N. Sherman, Merced; Indiana Med. Coll., Feb. 26,'75.
Mardis Campbell Simmons, Sheep Ranch; Med. Dept. Vanderbilt Univ., Tenn., Mch. 7,'89.
Stanley Stillman, San Francisco; Cooper Med. Coll., Cal., Nov. 12,'89.

The application of Dr. Guido Spitzy, of San Jose, for certificate, was again laid over for lack of diploma.

CHAS. E. BLAKE, Secretary.

ITEMS.

Dr. D. W. Montgomery has removed from 600 Sutter street to 1124 Sutter street, San Francisco.

Dr. Geo. B. Somers, late Assistant Surgeon Southern Pacific Company's Hospital, Sacramento, has opened an office at 46 O'Farrell street, San Francisco.

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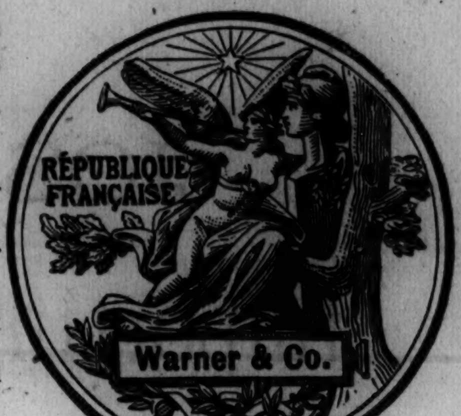

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Therapeutics—This pill is applicable to conditions referred to in the previous paragraph as well as to anemic conditions generally, to sexual weakness, to neuralgia in dissipated patients, etc., and Mr. Hogg considers it of great value in atrophy of the optic nerve.

PIL: PHOSPHORI CUM FERRO ET QUINIA.

(W. R. Warner & Co.)

℞ Phosphori, 1-100 gr.; Ferri Carb,, 1 gr.; Quiniæ Sulph., 1 gr.

Dose—One pill to be taken three times a day, at meals.

Therapeutics—Phosphorus increases the tonic action of the iron and quinine, in addition to its specific action on the nervous system. In general debility, cerebral anemia, and spinal irritation, this combination is especially indicated.

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℞ Phosphori, 1-100 gr.; Ferri Carb,, 1 gr.; Ext. Nucis Vom., ¼ gr.: Quiniæ Sulph., 1 gr.

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"During an epidemic of dengue or breakbone fever, I gave Liq. Tong. Sal. a thorough trial and found it much more successful than the usual treatment, such as iodide of potassium, wine of colchicum, quinine, salicylic acid, etc.; in fact, I found that Liq. Tong. Sal. effected a cure in nearly every instance." A. M. Sittler, M. D., Bowmanstown, Carbon Co., Pa.

International Medical Annual.—The eighth yearly issue of the *International Medical Annual* (for 1890) is announced for early delivery. The prospectus gives promise of excellences surpassing all former editions. Its thirty-seven editors in the several departments, are to give a summary of new remedies, alphabetically arranged; also a resume of new treatment, in dictionary form, with references to the medical literature of the world pertaining to the year's progress of medicine. Such a practical and helpful volume is of inestimable value to the medical profession. In one volume of about 600 octavo pages; price, $2.75, post free. E. B. Treat, publisher, 5 Cooper Union, New York.

Dioviburnia.—*St. Louis, June 14, 1888:* "Dioviburnia is superior to any remedy of its class I have ever used. I prescribe it daily, and almost invariably the patients report favorably, and express a desire to continue its use, both for the especial purpose for which it is prescribed and for its general tonic effect.

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Camphoric Acid.—Acid Camphoric (L. & F.), a product of the oxydation of camphor, occurs in colorless crystals, of needle form, and is almost insoluble in water, but soluble in alcohol and ether; it has been recommended as an antiseptic, astringent, and as a disinfectant in typhoid stools. Reichert suggests its superiority, used in 1 to 2 per cent. solution as a gargle or spray, over chlorate of potash, boracic and salicylic acids in angina and bronchitis. It has been employed in cases of diphtheria, but with indifferent success. Better results were attained with 3 to 6 per cent. solution, used as a spray for laryngeal tuberculosis. Internally it has been administered in doses of 1 to 2 grammes, three times daily, to prevent night sweats in phthisis.

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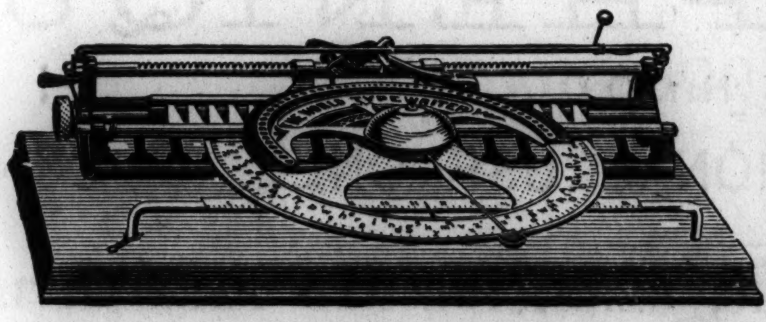

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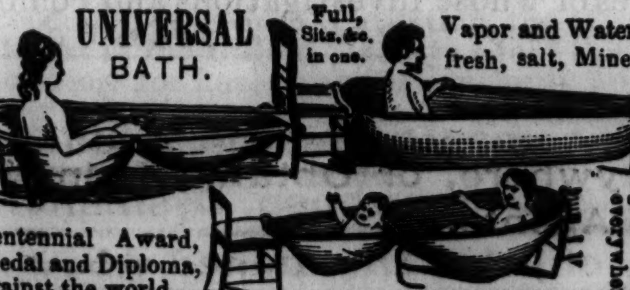
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MEDICAL COLLEGES.

University of California

MEDICAL DEPARTMENT.

SAN FRANCISCO, CAL.

SESSION OF 1889.

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G. A. SHURTLEFF, M. D.	Emeritus Prof. of Mental Diseases and Medical Jurisprudence
M. W. FISH, M. D	Emeritus Prof. of Physiology and Microscopy
R. BEVERLY COLE, A. M., M. D., M. R. C. S., Eng	Prof. of Obstetrics and Gynecology
W. F. McNUTT, M. D., M. R. C. P., Edin., etc	Prof. of Principles and Practice of Medicine
ROBERT A. McLEAN, M. D	Prof. of Clinical and Operative Surgery. DEAN
W. E. TAYLOR, M. D	Prof. of Principles and Practice of Surgery
A. L. LENGFELD, M. D	Prof. of Materia Medica and Medical Chemistry
WM. B. LEWITT, M. D	Prof. of Anatomy
BENJ. R. SWAN, M. D	Prof. of Diseases of Children
W. H. MAYS, M. D	Prof. of Mental Diseases and Medical Jurisprudence
WASHINGTON AYER, M. D	Prof. of Hygiene
G. H. POWERS, M. D	Prof. of Ophthalmology and Otology
WM. WATT KERR, A. M., M. B., C. M., Edin	Prof. of Clinical Medicine
ARNOLD A. D'ANCONA, A. B., M. D.	Prof. of Physiology
DOUGLAS W. MONTGOMERY, M. D	Prof. of Pathology and Microscopy
G. C. SIMMONS, M. D	Lecturer on Therapeutics
JOHN M. WILLIAMSON, M. D	Demonstrator of Anatomy

The Collegiate Year is divided into a REGULAR and PRELIMINARY TERM. The PRELIMINARY TERM begins March 1st and continues ten weeks. The REGULAR TERM begins June 1st and continues five months. During these terms all the branches of medicine and surgery are taught, didactically and clinically. Regular clinics are held three days in the week at the City and County Hospital, Potrero Avenue (450 beds), where the Professors of the practical chairs have charge of wards and possess every advantage for the instruction of students. There is also an active clinic conducted three times a week at the College building, where a large number of patients are examined and treated before the classes. Didactic lectures are given daily by the Professors, and evening recitations are held three times a week.

The dissecting room is open throughout the entire year. Material is abundant and costs but little.

It will thus be seen that the course of instruction, which extends through seven and one-half months of the year, aims at the development of practical physicians and surgeons. The great advantages possessed by the Medical Department of the State University, enable the Regents and Faculty to commend it in an especial manner to those seeking a complete and systematic knowledge of the medical profession. The facilities for bed-side study have been largely increased of late, and the student will find opportunities at his command which, for comprehensiveness, are nowhere surpassed.

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In response to the general demand, both in and out of the profession, for a higher degree of proficiency in medical education, the Medical Department of the State University was one of the first in the United States to adopt the three years' term of study. No student can present himself for final examination until he has attended faithfully three regular courses of lectures and clinics. While this requirement entails no extra expense in the matter of fees, it is a still further guarantee that none shall bear the diploma of the State Medical School but those thoroughly qualified.

FEES.

Matriculation Fee (paid but once)	$ 5
Demonstrator's Ticket	10
Fee for the First Course of Lectures	130
Fee for the Second Course of Lectures	130
Third Course of Lectures gratuitous for such as have paid for two full courses.	
Graduating Fee	40

For the Annual Announcement and Catalogue giving Regulations and other information, Address,

R. A. McLEAN, M. D., Dean, 603 Merchant St., S. F.

sept

University of California, Dental Department,

Toland Hall, Stockton Street, bet. Chestnut and Francisco Sts., San Francisco, Cal.

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C L. GODDARD, A.M., D.D.S.,	Professor of Mechanical Dentistry, Dental Metallurgy and Orthodontia
L. L. DUNBAR, D.D.S	Professor of Operative Dentistry and Dental Histology
MAURICE J. SULLIVAN, D.D.S	Professor of Dental Pathology and Therapeutics
W. E. TAYLOR, M.D	Professor of Principles and Practice of Surgery
A. L. LENGFELD, M.D	Professor of Chemistry and Materia Medica
WILLIAM B. LEWITT, M.D	Professor of Anatomy
A. A. D'ANCONA, A.B., M.D	Professor of Physiology

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HARRY P. CARLTON, D.D.S	Demonstrator of Operative Dentistry
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CHARLES BOXTON, D.D.S	Demonstrator of Mechanical Dentistry
S. A. HACKETT, D.D.S	Assistant Demonstrator of Mechanical Dentistry
JOHN M. WILLIAMSON, M.D	Demonstrator of Anatomy
JOHN H. BRABAT, Ph. G., M.D	Assistant Demonstrator of Anatomy
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REQUIREMENTS FOR ADMISSION.—Every candidate for admission must be 18 years of age. Unless already a matriculate of the University of California, or of some other recognized college or university, or a graduate of some recognized academy or high school, or holding a teacher's certificate, he must pass an examination in Arithmetic, Geography, English Grammar and Composition, U. S. History, Natural Philosophy and Chemistry.

REQUIREMENTS FOR GRADUATION.—The candidate for the degree of Doctor of Dental Surgery must have attained the age of 21 years. He shall have passed a satisfactory examination, both oral and written. He shall have studied dentistry THREE years, including two courses of lectures, one of which shall be at this institution. Graduates in medicine may apply for the degree of D.D.S. after having had two full years of practical instruction or experience in dentistry, one year of which, including one course of lectures, must be spent in the Dental Department of the University of California.

For announcement, terms, and further information, address

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500 Sutter St., San Francisco, Cal.

sept 12

The California College of Pharmacy

(Department of Pharmacy, University of California.)

FACULTY.

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WILLIAM T. WENZELL, M.D. PH.G.	Professor of Chemistry
HERMANN H. BEHR, M.D.	Professor of Botany
WILLIAM M. SEARBY	Professor of Materia Medica
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Graduates in Pharmacy of this College are permitted to present themselves for examination for the Degree of Doctor of Medicine in the Medical Department of the University of California and in the Cooper Medical College, after attending either of these schools two years instead of three, as required of other students. The fees have also been reduced in like proportion to graduates in Pharmacy. This generous concession is a gratifying evidence of the value of pharmaceutical instruction, and should not be overlooked by young men who design to make the practice of medicine their ultimate object. Graduates of such medical colleges as are recognized by the American Medical Association will be permitted to present themselves for examination for the degree after one year's attendance at this College, provided they have complied with all the other conditions for graduation.

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Sept 12

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CHAS. E. FARNUM, M. D., Adjunct to the Chair of Anatomy, and Demonstrator of Anatomy.

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GEO. F. HANSON, M. D., Adjunct to the Chair of Materia Medica and Therapeutics.

This College requires attendance upon three full courses of lectures, commencing in June of each year. A matriculating examination, or other evidence of possessing a fair English education, will be required on entering.

The College building was erected with special reference to its uses, and is elaborately supplied with apparatus for illustration and instruction.

The Regular Course commences with the first Monday of June of each year and terminates with October.

The Intermediate Course commences on the second Monday of January of each year and continues for sixteen weeks. Although attendance upon this Course is not obligatory, except for third course students, it is earnestly recommended that all attend who can possibly do so.

Clinics are given regularly at the City and County Hospital (450 beds) and the Morse Dispensary, where several thousand patients are treated annually.

Dissecting may be prosecuted during the entire year. Material is abundant, and through climatic influences and proper preparation its decomposition is so retarded as to permit the most deliberate study of anatomy.

FEES.

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Demonstrator's Ticket	10 00
First Course of Lectures	130 00
Second Course of Lectures	130 00
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Total	$315 00

No charge is made for the Third Course of Lectures, except to those who have not previously attended lectures in this College. A charge of $25 will be made on entering at the Intermediate Course, which, however, will be deducted from the fee for the succeeding Regular Course.

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1. The candidate must be of good moral character and at least twenty-one years of age.
2. He must have attended three Regular Courses of Medical Lectures, at least one of which must have been delivared in this institution; one Intermediate Course, and two Courses of Clinical Instruction. Attendance upon the Intermediate Course alone will not fill the conditions of this requirement.
3. He must have attended at least one Course of Practical Anatomy in the Dissecting Room, and present evidence of having dissected the entire subject.
4. He must write a Medical Thesis, and submit the same to the Faculty on or before the first of October.
5. He must have successfully passed the examination required by the Faculty, and have paid all fees due the College.

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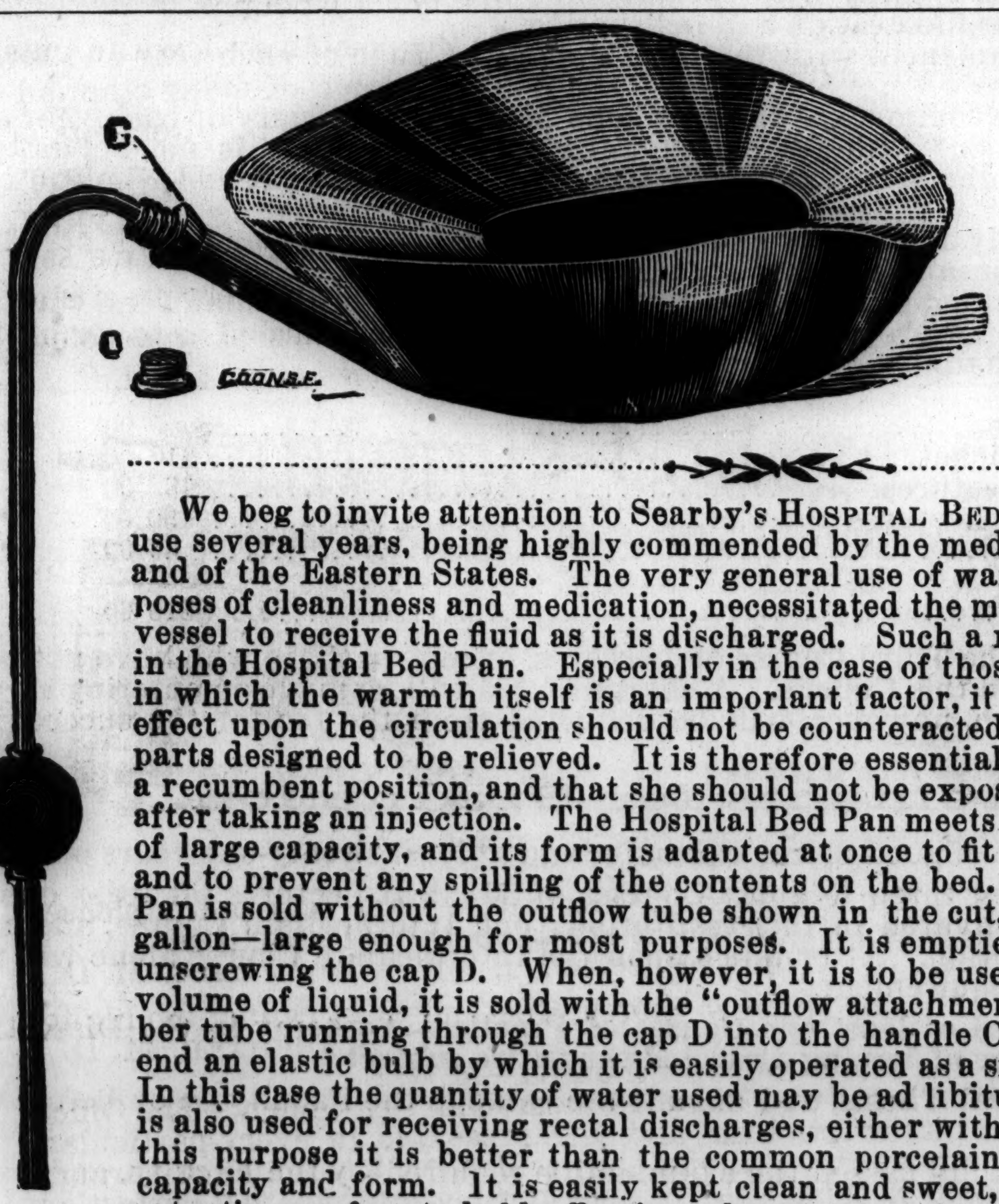

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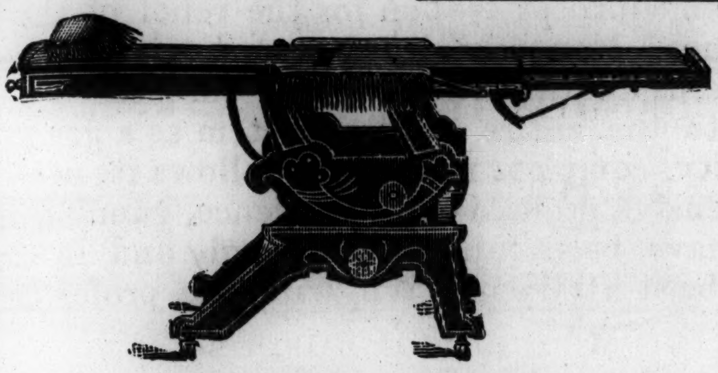

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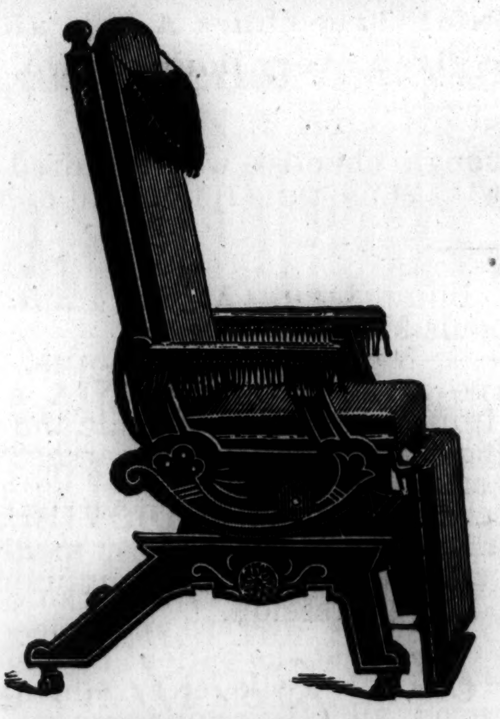
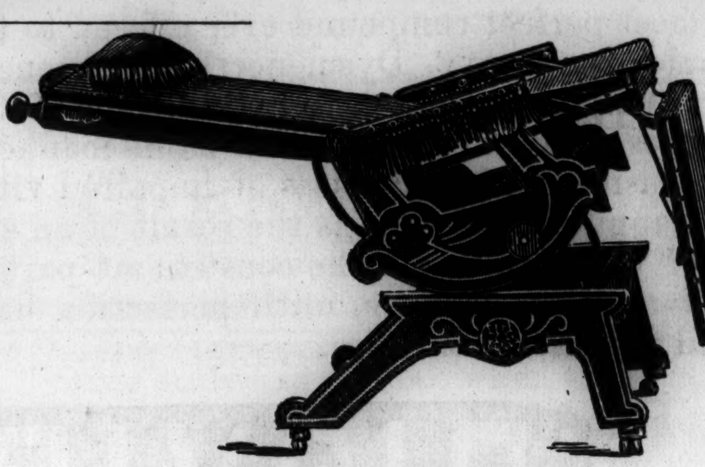


NORMAL POSITION.



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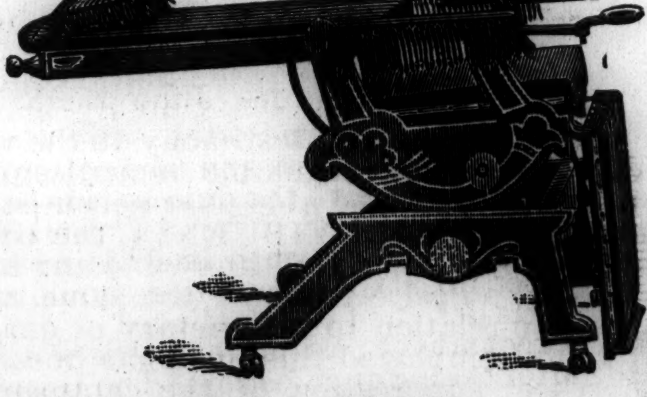

DORSAL POSITION.

Wichita, Kan., Aug. 31, 1888. Miner & Elbreg, Dear Sirs:—I am very much pleased with the Chair, and am glad to have got it. I think it excels anything I have seen.
Yours respectfully, L. A. BASS, M. D.

Duluth. Minn., Dec. 15, 1888. Messrs. Miner & Elbreg, Gentlemen:—I cannot too highly recommend your Chair. Yours, C. SLAUGHTER, M. D.

N. B.—Dr. Slaughter has had his Chair about six months.—M. & E.

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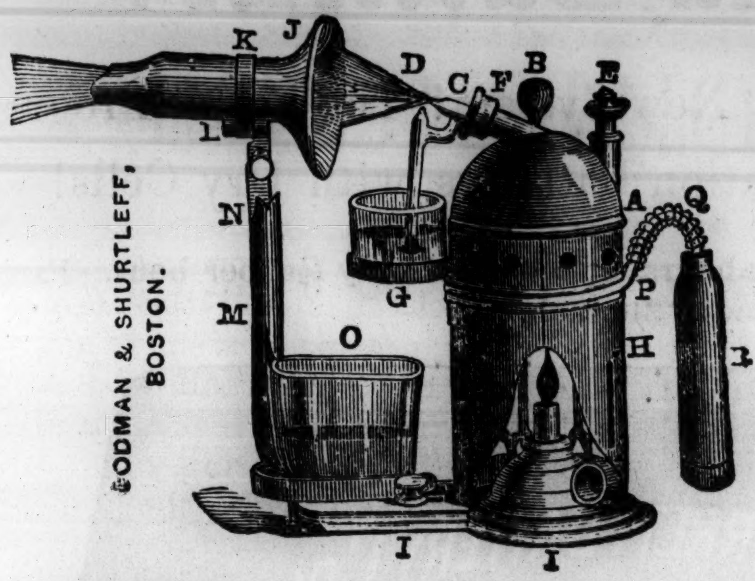

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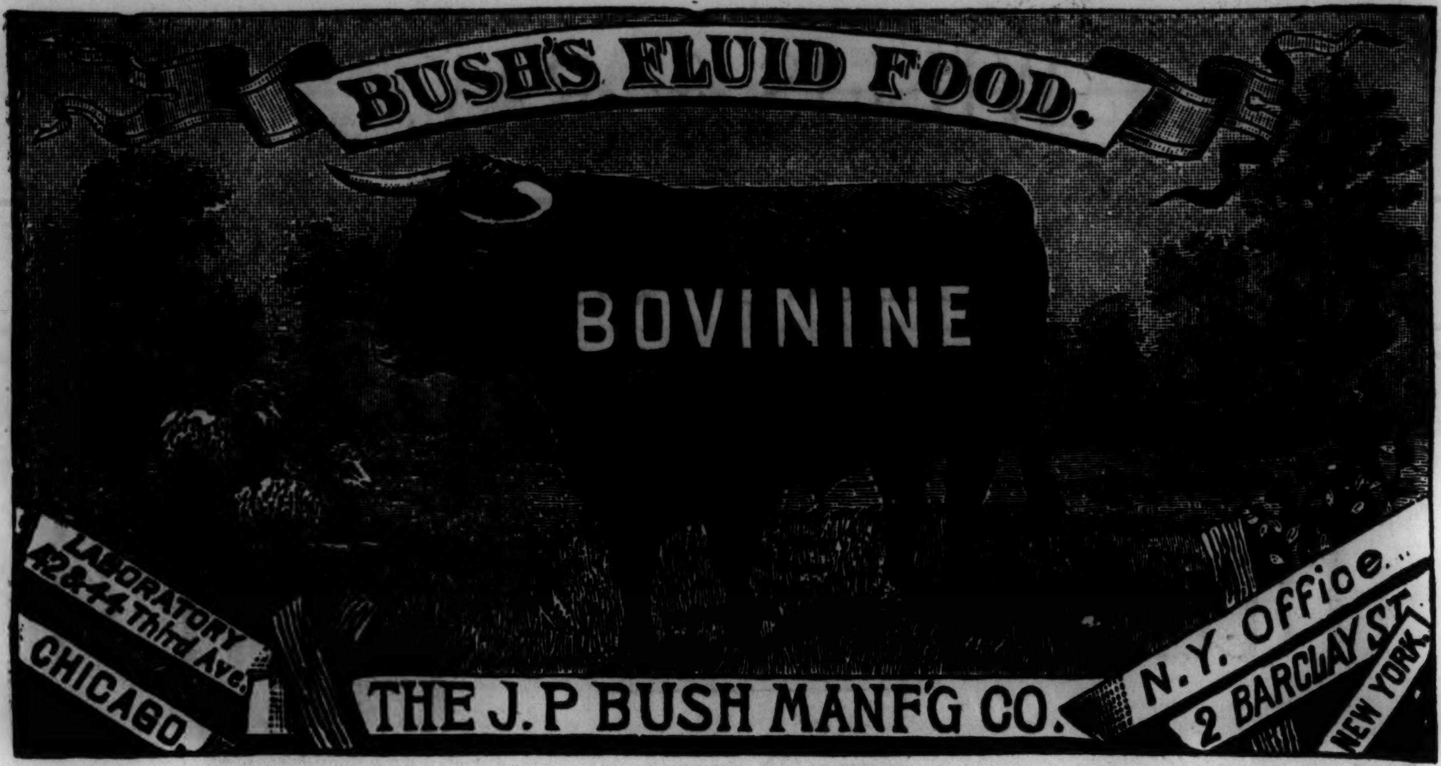
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